TWO PAPERS ON TEMPORALITY IN CHILDREN'S NARRATIVES

Learning to Talk About Movement Through Time and Space: The Development of Narrative Abilities in Spanish and English[1]

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The Development of Clause Chaining in Turkish Child Language[2]

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TABLE 1

NUMBER OF CHILDREN USING TENSE/ASPECT FORMS AT LEAST ONCE
(N = 12)

Tense/Aspect Form	Peninsular Spanish				Chilean Spanish				Argentinian Spanish			
	3 yrs	4 yrs	5 yrs	9 yrs	3 yrs	4 yrs	5 yrs	9 yrs	3 yrs	4 yrs	5 yrs	9 yrs
PR	11	8	7	10	10	10	8	6	12	8	10	9
PR.PG	6	7	3	5	10	10	4	2	10	7	8	5
IFV.PG	5	5	8	1	4	10	11	9	5	5	9	6
PFV.PG	0	0	0	2	0	1	0	0	0	0	0	0
IFV	9	10	7	11	7	8	12	12	8	11	11	12
PFV	8	10	9	6	12	12	12	12	12	11	12	10
PR.PF	9	4	6	3	0	0	0	0	0	0	0	0
PA.PF	0	3	2	6	0	1	3	9	0	0	0	8

TABLE 2

NUMBER OF CHILDREN USING PAST PERFECT AT LEAST ONCE
(N = 12)

COUNTRY	AGE				
	3	4	5	7	9
Spain	0	3	2	-	6
Chile	0	1	3	8	9
Argentina	0	0	0	5	8

TABLE 3

CHILDREN'S USE OF PARTICIPLES

AGE	SPAIN		CHILE		ARGENTINA	
	No. of Children	Mean No. of Participles/Child	No. of Children	Mean No. of Participles/Child	No. of Children	Mean No. of Participles/Child
3	7	1.7	7	1.2	0	0.0
4	8	2.4	10	1.4	5	1.2
5	7	2.4	6	1.8	2	1.0
7	-	-	8	1.8	7	1.6
9	6	2.3	11	1.3	3	1.0
11	-	-	6	3.2	9	1.1

LEARNING TO TALK ABOUT MOVEMENT THROUGH TIME AND SPACE: THE DEVELOPMENT OF NARRATIVE ABILITIES IN SPANISH AND ENGLISH

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Abstract

Narratives were gathered from Spanish- and English-speaking children and adults in response to a pictured story. Child subjects ranged in age from 3 to 11. Comparable samples were gathered in Spain, Chile, Argentina, and the United States. The data were analyzed in terms of the acquisition of grammatical means for expressing aspect, processes and states, event phases, and motion. It was found that children acquiring Spanish in all three countries quickly mastered the range of verbal aspectual inflections. Spanish grammar seems to orient children towards conceptions of the boundedness and extension of events in time. Differences between the verbal systems of Spanish and English seem to lead Spanish-speaking children to be more explicit about states and English-speaking children to be more explicit about processes and movements through space. In all four countries, school-age children learn to flexibly use grammatical devices in the construction of coherent narrative. It is suggested that, in acquiring a mother tongue, one adopts a particular sort of verbalized orientation to experience, as embodied in the set of grammatical options provided by the language.

INTRODUCTION

The grammar of every language provides speakers with a set of options for encoding characteristics of events in time and space. Although all human beings probably **experience** beginnings and endings, duration, and movement in similar fashion, languages differ in terms of their **verbalized orientation** to experience. This can be seen most clearly in the obligatory distinctions that are marked on verbs and in the set of specialized verbs and inflections for marking perspectives on time, place, and manner. In the Spanish past tense, for example, one is obliged to consider an event from an external perspective (perfective) or an internal perspective (imperfective), presenting it as a bounded entity (e.g., *Juan habló* 'Juan spoke-PFV') or an entity with extent or iterativity (e.g., *Juan hablaba* 'Juan spoke-IFV').[1] While the simple English past tense is appropriate for encoding *John spoke with Mary yesterday, John spoke with Mary every day,* and *John spoke Spanish with Mary,* in Spanish one is obliged to distinguish between *Juan habló ayer con María* 'Juan spoke-PFV yesterday with Maria', *Juan hablaba con María todos los días* 'Juan spoke-IFV with Maria every day', and *Juan hablaba español con María* 'Juan spoke-IFV Spanish with Maria'. Or, to take an example from movement through space, Spanish prefers to use verbs that express **directionality** (e.g., *entrar* 'enter', *salir* 'exit'), while expressing **manner** of movement with separate verbs (e.g., *correr* 'run', *volar* 'fly'). English, by contrast, prefers directionless verbs of manner (e.g., *run, fly*) with particles indicating directionality (e.g., *in, out, to, from*). Compare: *El perro salió de la casa corriendo* 'The dog exited from the house running' and *The dog ran out of the house.*

One would not want to claim that mental images or nonverbal representations of events differ for English and Spanish speakers. However, there seem to be clear differences in the ways in which one's thoughts are mobilized, moment-by-moment, for purposes of speaking in one language or another—what Slobin (1987) has called "thinking for speaking." Children, in acquiring a mother tongue, must learn to filter their conceptions through the set of options that are codified in the

[1] The following abbreviations are used in this paper: IFV = imperfective, PA = past, PART = participle, PF = perfect, PFV = perfective, PG = progressive, PR = present, PREP = preposition.

grammar. In this study, we explore some of the ways in which Spanish- and English-speaking children differ in the ways that they talk about the same events. We will see that, already in the preschool years, children show that they are sensitive to particular ways in which the mother tongue codifies experience.

METHOD

The research reported here is part of a larger study that was designed to collect comparable speech samples from children and adults across a wide range of languages. We asked adults and children of ages 3-11 to narrate a picture storybook that presents a clear plot with no verbal text. This method allows us to compare the ways in which speakers of different ages, and speaking different languages, talk about the same events. The overall study was carried out in the United States, Spain, Germany, Israel, and Turkey. More recently, the second author has collected comparable narratives in Chile and Argentina. The focus of the present report is a comparison between Spanish and English, and, within Spanish, between Peninsular, Chilean, and Argentinian varieties.[2]

The picture book, *Frog, where are you?* (Mayer, 1969), consists of a series of 24 pictures. The action centers on a boy whose pet frog has escaped. The boy and his dog go searching for the frog in a forest, encountering various animals and undergoing a series of adventures before finally finding the frog. The plot is rich in causal and temporal sequences, movement from place to place, surprises, and switches of attention between the overlapping endeavors of the boy and the dog. It is a useful stimulus for expressions of tense, aspect, causality, movement, and location.

In Spain and the United States, data were gathered from five age groups: 3, 4, 5, 9, and adults, with 12 narrators in each group.[3] In Chile and Argentina, there were seven age groups, 3, 4, 5, 7, 9, 11, and adult, with 12 narrators in each group. The narrator was presented with the picture book and told: "This is a story about a boy, a dog, and a frog." He or she was then asked to look through the book silently, page-by-page, in order to become familiar with the plot. The investigator then opened the book to the first page, asking the narrator to "tell the story." In order not to bias the form of telling, prompts were given without verbs (e.g., "and?...," "what next?"). The texts were taperecorded and transcribed clause-by-clause, where clause was defined as a predicate containing a verb. For example, the following English sentence was divided into four clauses for purposes of analysis: *They walk along / until they find a hole / into which the boy peers / looking for the frog.* The number of clauses in the child stories ranged from a lower bound of 20 in the 3-year-olds to an upper bound of 102 in the 11-year-olds.

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[2] The original study ("A crosslinguistic investigation of the development of temporality in narrative") was designed by Dan I. Slobin in collaboration with Ruth A. Berman, Tel Aviv University, Israel, using a method developed by Michael Bamberg (1987). Peninsular Spanish data were gathered and transcribed in Madrid by Eugenia Sebastián, Universidad Autónoma; English data were gathered and transcribed in Berkeley by Virginia Marchman and Tanya Renner, University of California. The study was supported by the U.S.-Israel Binational Science Foundation (Grant 2732/82), the Linguistics Program of the National Science Foundation (Grant BNS-8520008), the Sloan Foundation Program in Cognitive Science (Institute of Cognitive Studies, University of California at Berkeley), and the Max-Planck-Institut für Psycholinguistik (Nijmegen, The Netherlands). The study of Latin American Spanish was carried out by Aura Bocaz, Departamento de Lingüística, Universidad de Chile, Santiago, with support from Grant H2643-8712 from Universidad de Chile. Narrative texts were gathered by Aura Bocaz in Chile and Argentina and were transcribed by Carmen Julia Coloma and María Francisca Palma. Work on the present paper was carried out at the Institute of Human Development, University of California at Berkeley, with assistance from Jane Edwards, Elena Escalera, and Cecile Toupin. Reports of other aspects of the crosslinguistic study can be found in Bamberg (1987), Berman (1987), Berman and Slobin (1987), Renner (1988), Slobin (1987, 1988, in press), and a forthcoming project volume edited by Berman and Slobin.

[3] Only six adult narrations have been analyzed from the Spanish sample.

RESEARCH AIMS: TENSE AND ASPECT

Aspectual distinctions. Of all the languages in our crosslinguistic sample (Spanish, English, German, Hebrew, Turkish), Spanish has the most elaborated tense/aspect system. It shares with English a perfect and a progressive in past, present, and future tense (*había corrido* 'had run', *ha corrido* 'has run', *habrá corrido* 'will have run'; *estaba corriendo* 'was running', *está corriendo* 'is running', *estará corriendo* 'will be running'), along with a simple present (*corre* 'runs'). However, unlike English, Spanish also makes a perfective/imperfective distinction in the past (*corrió* 'ran-PFV', *corría* 'ran-IFV'). This distinction intersects with the past progressive, allowing for a distinction between imperfective and perfective auxiliaries that cannot be expressed in English (*estaba/estuvo corriendo* 'was-IFV/was-PFV running'). (For a full presentation of the Spanish verbal system, see Bull, 1960.) One aim of the study was to determine the development of these systems in child language, with the expectation that Spanish-speaking children may take considerable time in acquiring the full range of distinctions. A further aim was to explore possible differences between the three varieties of Spanish and the influence of these differences on acquisition.

States and processes. We were also interested in the contrasting ways in which Spanish and English express notions of state, process, and motion. In an insightful analysis, Leonard Talmy (1985) has provided a typological framework for "lexicalization patterns"—that is, the systematic relations in language between semantic elements and surface forms. Consider the relation between states and processes, taking body posture as an example. There are three basic notions: (1) to be in a posture, (2) to get into a posture, and (3) to put someone into a posture. In English, a simple verb expresses the first notion, while the remaining notions are marked derivatively: (1) *I lay there*; (2) *I lay down*; (3) *I laid the child down*. In Spanish, by contrast, it is the third notion that is expressed by a simple verb, while the other two are derived: (1) *Acosté al niño* 'I-laid-down the child'; (2) *Me acosté* 'myself I-laid-down'; (1) *Yo estaba acostado* 'I was laid-down'. Talmy notes that this pattern is used not only for posture, but is a general feature of languages of various types for expressing (1) to be in a condition, (2) to enter into a condition, and (3) to put into a condition (causative). He cites, as an example, the conditions of water: (1) condition: *El agua estaba helada* 'the water was frozen'; (2) inchoative: *El agua se heló* 'The water REFL froze'; and (3) causative: *Helé el agua* 'I-froze the water'. Note the special role played by participles in Spanish. We have not only the expression of condition in (1), but also the adjectival *agua helada* 'frozen water' and the perfect *El agua se ha helado* 'the water has frozen'. We expected that this widespread use of participles would be reflected in Spanish-speaking children's attention to end-states, contrasting with English-speaking children's attention to processes or activities. For example—to anticipate a finding to be discussed below—there are interesting crosslinguistic differences in the descriptions of actions that result in states. Where English speakers tend to say *The boy climbed the tree*, leaving the boy's end-state implicit, Spanish speakers often say *El niño está subido en el árbol* 'the boy is climbed-PART in the tree' (i.e., the boy is in a state of having climbed the tree). The languages differ in what is asserted and what is implied: English asserts the action, implying the result, while Spanish asserts the result, implying the action.

Event phases. In addition to tense/aspect categories marked on the verb by inflections and auxiliaries, Spanish makes use of a large collection of "semi-auxiliaries" (Green, 1982) to mark "phases" of events in time. Here we were especially interested in forms that mark **inception** (e.g. *empezar*, *ponerse* 'begin'), **protraction** (e.g. *seguir* 'continue'), **continuation** (e.g., *quedarse* 'remain'), and **conclusion** (e.g., *lograr* 'succeed'). We expected that, at some point in development, Spanish-speaking children would begin to show special attention to (a) temporal movement towards and away from boundaries of events and (b) to the internal progress of events.

FINDINGS: ASPECTUAL DISTINCTIONS

The two tenses that occur in our texts are present and past, generally depending on whether the narrator chooses to present an ongoing, present-tense narrative with regard to the pictures or to use a "story mode" of narration in the past. The youngest children, however, sometimes use forms of present and past tense to mark the **aspect** of pictured events, rather than to locate them on a narrative time line. These are children who have not yet constructed a "narrative time" distinct from "speech time," and essentially describe what they see in the pictures. In both English and Spanish, there is a tendency in some of the 3-year-old texts to describe **processes** with a present-tense form and **states** with a past-tense form. This can be seen, for example, in the following utterances, in which children described a picture that shows a boy lying on the ground, having fallen from a tree, and a dog running past, chased by bees.[4]

(1) He*'s running* through there and he *fell* off. [3;8]

(2) *Se ha caído*. [El perro] *está corriendo*. [3;8, P]
'(He) *has fallen*. The dog *is running*.'

(3) *Se cayó*. El perro *está corriendo*. [3;4, C]
'(He) *fell-PFV*. The dog *is running*.'

(4) El nene *se cayó*. El perro *está corriendo*. [3;8, P]
'The boy *fell-PFV*. The dog *is running*.'

Note that, in all of these examples, the process (running) is described in the progressive, indicating an appropriate sense of aspectual inflection. But, lacking a fully developed **narrative** use of the tense/aspect system, these children apparently cannot maintain a perspective in which both states and processes can be described in the past.

When English-speaking children begin to speak in narrative time, they do not have a readily available aspectual contrast, and often report both events in the simple past, as in (5):

(5) The bees *ran* after the dog. And the boy *fell*. [5;3]

It is not until the mastery of the past progressive, between ages 4 and 5, that English-speaking children are able to mark the aspectual contrast; e,g,:

(6) The boy *fell* out and the bees *were flying* after the dog. [5;11]

Spanish-speaking children, by contrast, are faced with a richer set of aspectual distinctions in the past. An event can be reported as **perfect** (*Se ha caído* '(he) has fallen'), **perfective** (*Se cayó* '(he) fell'), **imperfective** (*Sa caía* '(he) fell/was falling'), or **progressive** (*Se estaba cayendo* '(he) was falling'). When we began our crosslinguistic investigation, we expected that this range of aspectual distinctions would be difficult for preschool children and that it would take them some time to acquire and sort out the several forms. To our surprise, however, we found that Peninsular Spanish 3-year-olds made appropriate use of all four past-tense forms. We came to the conclusion that "the richer the language, the more distinctions acquired" (Slobin, in press). That is, Spanish, with its rich set of aspectual distinctions, actually stimulates children to attend to the relevant temporal orientations towards events. However, it could have been that our sample of preschool children in Madrid was especially precocious for reasons not associated with the structure of Spanish. The addition of Chilean and Argentinian samples allows us to sort out possible factors of sampling bias and

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[4] Ages are given as "years;months." Varieties of Spanish are given as P (Peninsular), C (Chilean), and A (Argentinian).

linguistic determinism. As shown in Table 1, we have found that 3-year-olds in all three Spanish-speaking countries make full use of perfective, imperfective, and progressive in the past, indicating that it is, indeed, the nature of Spanish grammar that is responsible, rather than other factors inherent in our Madrid sample. At the same time, only the Peninsular children use the present perfect, reflecting the relative infrequency of use of this form in Latin American varieties. As we had concluded earlier: "children as young as 3 seem to be guided in how they choose to talk about experience by the most available grammatical means provided by their native language" (Slobin, 1987, p. 443). Table 1 shows the number of children in each age-group and language sample using each of the available tense/aspect forms. (Age-groups 7 and 11 are omitted from the Table, since these groups are not represented in the Peninsular Spanish sample.)

TABLE 1

NUMBER OF CHILDREN USING TENSE/ASPECT FORMS AT LEAST ONCE
(N = 12)

Form	Peninsular Spanish				Chilean Spanish				Argentinian Spanish			
	3 yrs	4 yrs	5 yrs	9 yrs	3 yrs	4 yrs	5 yrs	9 yrs	3 yrs	4 yrs	5 yrs	9 yrs
PR	11	8	7	10	10	10	8	6	12	8	10	9
PR.PG	6	7	3	5	10	10	4	2	10	7	8	5
IFV.PG	5	5	8	1	4	10	11	9	5	5	9	6
PFV.PG	0	0	0	2	0	1	0	0	0	0	0	0
IFV	9	10	7	11	7	8	12	12	8	11	11	12
PFV	8	10	9	6	12	12	12	12	12	11	12	10
PR.PF	9	4	6	3	0	0	0	0	0	0	0	0
PA.PF	0	3	2	6	0	1	3	9	0	0	0	8

It can be seen in Table 1 that, with the exception of the perfect, all of the forms are already in use at the youngest age level, and show no evident developmental pattern.

Progressive and Imperfective vs. Perfective. Three-year-olds use both the progressive and the imperfective, as well as the gerund, to describe actions in process, as indicated in the following examples:

(7) El nene se cayó. Los bichos *estaban persiguiendo* al perro. [3;6, A]
'The boy fell-PFV. The bugs *were chasing* the dog.'

(8) Se cayó. *Corría* el perro. [3;7, A]
'(He) fell-PFV. The dog *ran-IFV*.'

(9) El niño se cayó del árbol y el perro se fue *corriendo*. [3;11, P]
'The boy fell-PFV from the tree and the dog went-PFV *running*.'

In examples (7-9) we see a match between choice of aspectual form and the inherent temporal characteristics of events (*Aktsionart*): falling is a completed act, depicted in its end-state (boy lying on ground); accordingly it is presented with a perfective verb form. Running/chasing are depicted in progress, and are presented in verb forms expressing a durative or extended temporal contour. In fact, in all of the above examples except for (5), which shows no aspectual contrast, preschool children seem to be guided by *Aktionsart* in their choice of aspectual form. However, by age 5, Spanish-speaking children are able to take different perspectives on events described by the **same** verbs, choosing aspectual forms not on the basis of *Aktionsart*, but rather on the basis of how the event is **conceived** of by the child. For example, in one picture the boy is watching the dog fall from a window. The dog is depicted in mid-fall, between the window and the ground. In this event, falling is imperfective, and the child says:

> (10) El niño veía que se caía el perro. [5;4, P]
> ‘The boy saw-IFV that the dog fell-IFV.’

Note that both ‘see’ and ‘fall’ are imperfective in (10), presenting the two events as simultaneous and extended. However, the same child can also take a perfective perspective on ‘see’ on situations in which seeing is conceived of as momentary. In (11) the boy discovers that the frog’s jar is empty, and realizes that the frog has run away. The absence of the frog is durative, and therefore imperfective.

> (11) Vio que no estaba la rana. [5;4, P]
> ‘(He) saw-PFV that the frog was-IFV not (there).’

In (12) seeing is, again, momentary. The boy and his dog, at the end of the story, have found the frog that escaped. The escape is a single, completed event, and therefore perfective. In this instance, both verbs are perfective:

> (12) Vieron a la rana que se escapó. [5;4, P]
> They saw-PFV the frog that escaped-PFV.’

Thus, by age 5, aspect can be flexibly used to indicate the way in which the narrator conceives of events, independent of the *Aktionsart* of the verb. Such contrasts in perspective are not grammatically marked in English, and it apparently does not occur to English-speakers to find means to mark the distinctions that are so natural in Spanish. For example, a 5-year-old presents all of the following verbs in the simple past, with no elaboration:

> (13) The frog crawled out. And then, when he [boy] saw that he
> crawled out, he was sad. [5;3]

Even English-speaking adults present aspectually unelaborated accounts; e.g.:

> (14) When he woke up in the morning, he saw that the frog was gone.
> And he was very sad. [adult]

Perhaps the most significant use of aspectual contrasts is in the organization of discourse. In a seminal paper, Paul Hopper (1979) has made a basic distinction between **foreground** and **background**:

> It is evidently a universal of narrative discourse that in any extended text an overt distinction is made between the language of the actual story line and the language of supportive material which does not itself narrate the main events. I refer to the former—the parts of the narrative which relate events belonging to the skeletal structure of the discourse—as **foreground** and the latter as **background** (p. 213).

When children begin to organize their "frog stories" in terms of an overall narrative, rather than a sequence of discrete events, they recruit aspectual contrasts in terms of foreground and background. Hopper notes a widespread correlation between aspect and grounding:

> Because foregrounded clauses denote the discrete, measured events of the narrative, it is usually the case that the verbs are punctual rather than durative or iterative. ... One finds ... a tendency for punctual verbs to have perfective aspect (i.e., to occur in foregrounded sentences) and conversely for verbs of the durative/stative/iterative type to occur in imperfective, i.e. backgrounded, clauses (p. 215).

This distinction begins to be evident in 5-year-old stories, in contexts where the child gives the reason or motivation for actions and in contexts where an action is carried out against a stative background. For example, one child explains the actions of the dog (foreground, perfective) in terms of the preceding activity of the bees (background, past imperfective progressive):

(15) El perro se asustó, y también salió. Se asustó porque
las abejas lo estaban persiguiendo. [5;8, C]
'The dog got-frightened-PFV, and also came-out-PFV. He
got-frightened-PFV because the bees were-IFV chasing him.'

Another 5-year-old adds a background comment (imperfective) about the location from which the boy fell:

(16) Se cayó del árbol en que estaba. [5;7, C]
(He) fell-PFV from the tree in which he was-IFV.'

By age 9, children are adept at interweaving foreground and background, switching between aspectual forms to construct a continuous, connected narrative. For example, the following segment shows a series of foregrounded, plot-advancing clauses in the perfective (in Italics), with interspersed background clauses in the imperfective, giving information about the location of participants and the narrator's outside perspective on a situation not known to the boy. (After the boy has fallen from the tree, he climbs a rock and holds onto what appear to be branches, but which turn out to be the antlers of a deer.)

(16) El niño que estaba parado en el árbol *se cayó de espalda*.
Salió un búho en el hoyo en que él estaba buscando.
El niño trató de esconderse, y se subió a una roca
y se apoyó en unas ramas, pero estas ramas no eran ramas
sino que eran de un venado, *y el niño se cayó encima*
del venado. [9;4, C]

'The boy who was-IFV up in the tree *fell-PFV on his back.*
An owl came-PFV out of the hole in which he was-IFV looking.
The boy tried-PFV to hide himself, and he climbed-PFV a rock
and held-PFV onto some branches, but these branches weren't-IFV branches
but were-IFV of a deer, *and the boy fell-PFV on top of the deer*.'

It is evident that tense/aspect forms have a long developmental history in childhood. The acquisition of these forms involves more than the matching of verb form and meaning—which appears to be accomplished in the early preschool years. The child must learn to flexibly use verb forms to direct the listener's attention in the flow of connected discourse.

FINDINGS: STATES AND PROCESSES

Perfect vs. Non-Perfect. In addition to the backgrounding of situations with temporal extent, by means of imperfectives and progressives, Spanish and English both provide another kind of grammatical backgrounding device—the perfect—which is used to relate a prior event to a present circumstance. The perfect is rather different from the aspects we have considered thus far; indeed, many linguists prefer to treat it as a "relative tense" or as a special category that partakes of both tense and aspect. As Comrie (1976) notes in his book on aspect: "The perfect is rather different from [perfective and imperfective] aspects, since it tells us nothing directly about the situation in itself, but rather relates some state to a preceding situation" (p. 52). As shown in Table 1, two-thirds of the Peninsular Spanish 3-year-olds make use of the perfect. Their uses correspond fully to

Comrie’s definition. For example, in one picture the boy has gotten caught on a deer’s antlers and the deer is running towards the edge of a cliff to throw the boy down into a pond. (Note the use of present perfect *has gotten caught* and progressive *is running* in the preceding English description of the situation.) One 3-year-old said:

(17) Le ha cogido el ciervo y le va a tirar aquí al agua. [3;8, P]
'The deer has caught him and is going to throw him here in the water.'

This example clearly illustrates Comrie’s general characterization that "the perfect indicates the continuing present relevance of a past situation" (p. 52). Here the fact that the boy has been caught is of continuing relevance to his imminent fall into the water. The perfect combines two time points: the time of being caught (expressed by the participle *cogido* ‘caught’) and the present (expressed by *ha* ‘has’). (As we will see later, it is significant that the Spanish participle also functions as an adjective—e.g., *El niño está cogido* ‘The boy is caught’—facilitating Spanish-speaking children’s attention to the description of states.)

We had expected the perfect to be a late acquisition, since it combines two temporal perspectives. Nevertheless, it is widely used in our Madrid sample. However, there are **no** uses of the perfect in any of the stories told by English-speaking children, and it is a later development in the Latin American varieties.[5]

The present perfect is not used by any of our Latin American children. However, as shown in Table 2, the past perfect begins to make its appearance at ages 4 and 5 in Chile, and by age 7 it is frequently used in both Chile and Argentina.

TABLE 2

NUMBER OF CHILDREN USING PAST PERFECT AT LEAST ONCE
(N = 12)

COUNTRY	AGE				
	3	4	5	7	9
Spain	0	3	2	-	6
Chile	0	1	3	8	9
Argentina	0	0	0	5	8

The past perfect is used in Peninsular Spanish by age 4 as well. Its use is always **retrospective**, that is, to indicate an event that occurred prior to the narrative line in stories recounted in the past. This is evident in its earliest use in our samples. A child of 4;6 recounts a series of events in which the dog puts his head in the empty jar of the frog and falls out of a window, breaking the jar and angering the boy. Note that the event is first presented as foreground, in the perfective; then is referred to as a continuing background situation in the imperfective; and then is referred to retrospectively in the past perfect:

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[5] It has frequently been noted that the perfect is more widely used in Europe—both in Great Britain and in Spain—than in the New World. In a comparison of Scottish and American English, Gathercole (1986) found that Scottish adults used the present perfect far more frequently in their speech to children than do American adults, and that Scottish children used the present perfect as young as 3;0, while it did not begin to be used by American children until about 4;6. Apparently the temporal notions encoded by the perfect are accessible to 3-year-olds if they hear the form frequently enough. Our data show a similar contrast between Spain and Latin America.

(18) El perro puso su cabeza sobre el frasco. ...
El perro tenía el frasco adentro de la cabeza.
Saltó corriendo con el frasco,
y el niño estaba muy enojado
porque se había ponido el frasco. [4;6, C]

The dog put-PFV his head over the jar. ...
The dog had-IFV the jar inside his head.
(He) jumped-PFV running with the jar,
and the boy was-IFV very angry
because (he) had put the jar.

It seems evident that the acquisition of the past perfect reflects an emerging sense of narrative organization. It does not come to be widely used until after age 7, when children show evidence of a sense of plot in their narrations.

Participles. The error in participle formation in the last clause of (18) (the regularization *ponido* instead of the irregular *puesto*) is clear evidence that the participle is already a productive form at age 4;6. Even for children who do not use the perfect, use of the participle indicates the attention paid by Spanish-speaking children to end-states, or the enduring results of processes. We noted this in the introduction, comparing the use of the participle in *El niño estaba subido en el árbol* 'The boy was climbed-PART in the tree' with the English process-oriented description, *The boy climbed the tree*. The Spanish example comes from a Chilean child of age 3;3. As shown in Table 3, Peninsular and Chilean 3-year-olds make frequent use of such forms (e.g., *subido* 'climbed', *tirado* 'thrown', *sentado* 'seated', *colgado* 'hung').

TABLE 3

CHILDREN'S USE OF PARTICIPLES

AGE	SPAIN		CHILE		ARGENTINA	
	No. of Children	Mean No. of Participles/Child	No. of Children	Mean No. of Participles/Child	No. of Children	Mean No. of Participles/Child
3	7	1.7	7	1.2	0	0.0
4	8	2.4	10	1.4	5	1.2
5	7	2.4	6	1.8	2	1.0
7	-	-	8	1.8	7	1.6
9	6	2.3	11	1.3	3	1.0
11	-	-	6	3.2	9	1.1

The participle seems to be somewhat more widespread in the speech of Peninsular 3-year-olds, perhaps related to the earlier acquisition of the present perfect in Spain. Chilean 4- and 5-year-olds quickly catch up with Peninsular children, but the participle—like the perfect—is a later acquisition in Argentina, not becoming widespread until age 7. By age 9, both the perfect (present or past) and the adjectival use of the participle are widespread in all three Spanish varieties.

English-speaking children, by contrast, describe postures and locations by the use of active verbs. Note, for example, the following comparisons in parallel English and Spanish sentences from stories told by 4-year-olds:

(19) He sat down.
El niño estaba sentado. ‘The boy was seated.’

He climbed a tree.
Está subido arriba de un árbol. ‘He is climbed on top of a tree.’

He got onto a reindeer.
Aquí está el niño colgado de un ciervo. ‘Here the boy is hung from a deer.’

Spanish-speaking children also make use of other devices to indicate an attention to an event as completed but still currently relevant. The most widespread is the use of the adverb *ya* ‘already’. For example, the youngest Chilean child, at age 3;2, uses *ya* in contexts where the perfect would be appropriate, as if indicating an awareness of the category marked by the perfect:

(20) Están durmiendo. La rana ya salió. [3;2, C]
‘They are sleeping. The frog already left-PFV.’
(cf. La rana (ya) ha salido. ‘The frog has (already) left.’)

Another frequent device is the verb *quedar(se)* ‘remain’, which explicitly encodes a continuing state resulting from a completed process. For example:

(21) El perro metió la cabeza en el frasco.
Se quedó el frasco ahí. [3;2, C]
‘The frog put his head in the jar. The jar remained there.’

One 3-year-old even used *ya* along with an explicit verb of completion, *terminar* to graphically describe an end-state:

(22) Los tiró al agua. Después ya se terminó de caer. [3;8, A]
‘(He) threw them to the water. Then they already stopped falling.’

Such examples—and they are highly frequent in our Spanish texts—support our expectation that Spanish-speaking children are guided by their language to pay special attention to end-states. They note that states result from processes, often leaving the process itself to be inferred, and that processes can result in enduring states that continue to be relevant for the action at hand.

FINDINGS: EVENT PHASES

The use of participles and *quedarse* to mark states that persist in time is part of a larger linguistic orientation in Spanish to conditions preceding and following the boundaries of events. Coseriu (1976) speaks of the verbal category of "phase," which deals with "a relationship between the moment of regard and the degree of development (of the course) of the verbal process under consideration" (p. 103).[6] Expressions such as *se quedó sentado* ‘he remained seated’ (=he ended up in a seated posture) orient to the phase that follows completion of an action (hence the use of *terminar* in (22)). Spanish has special forms for the phases just preceding an event, just following the onset of an event, continuing within the boundaries of an event, approaching the termination of an event, and just following termination. Coseriu labels these phases in the following chart (p. 103).

[6] "Bei der Kategorie der Phase handelt es sich um ein Verhältnis zwischen dem Augenblick der Betrachtung und dem Grad der Entwicklung (des Ablaufes) des betrachteten Verbalvorgangs."

define point X arrow down 0.50i; line invis down .20i; $1 at bottom of last line X line down .50i; point("imminent") line invis down .20i; "ingressive" at bottom of last line move up .90i right 1.00i; line right 4.00i; move left 2.00i; line invis up .25i; "VERBAL ACTION" at top of last line move left 2.00i down 0.25i; point("inceptive") move right 1.00i up 0.70i; point("progressive") move right 1.00i up 0.70i; point("continuative") move right 1.00i up 0.70i; point("regressive") move right 1.00i up 0.70i; point("conclusive") move right 1.00i up 1.20i line down .50i; point("egressive")

All of the phases receive widespread marking in three samples of children's narratives in Spanish. Although we have not carried out systematic counts, it is our impression that English-speaking children pay less attention to all of these phases, although they can be expressed by a variety of periphrastic means in English. In Spanish they are expressed by a set of forms that Green (1982) has characterized as "semi-auxiliaries"—a class of verbs that exhibit a degree of grammaticization for the expression of aspectual notions. Many of these forms appear in our child texts. Some examples are given below.

Imminent. The most grammaticized expression of this phase is the verb *estar* 'to be' with the preposition *por*. It is shown clearly in the following description of a picture sequence in which the boy and his dog approach a log and then climb over it:

(23) Están por subir, y después ya están subiendo. [4;5, A]
'They are about to climb, and then they are already climbing.'

Note also the use of *ya* 'already' in the second clause, indicating the child's attention to the preceding, imminent phase of intention to climb.

Imminence is also frequently expressed in the immediate future form, using the periphrastic *irse a* 'go-REFL to' plus the infinitive. Compare the following two descriptions of a picture in which the frog is crawling partway out of its jar:

(24) La rana está por salir. [4;3, A]
'The frog is about to leave.'

La rana se va a salir. [4;6, C]
'The frog is going to leave.'

Inceptive. The most grammaticized form for this phase is the semi-auxiliary *ponerse* (literally 'to put oneself'). It is widely used in our texts to indicate the inception of a state, as in:

(25) El se puso triste. [3;8, C]
'He got sad.'

For the inception of processes, children use the more transparent *empezar* 'begin'. This form begins to make its appearance at age 4, becoming more frequent after age 5, when it is used to mark the beginning of a new episode. Its use is thus tied to the development of plot organization in narrative. In the following examples, the boy and dog realize that the frog has escaped, and begin to search in their room; not finding the frog there, they begin to search outdoors.

(26) Empezaron a buscar por todos lados.
... Empezaron a buscar por afuera. [5;2, C]
'They began to look all over. ... They began to look outside.'

Progressive. In addition to progressive aspect, for which Spanish uses the auxiliary verb *estar* 'to be' with a gerund, Coseriu characterizes a progressive **phase**, using the verb *ir* 'to go' with a gerund. This phase is used very frequently in our texts, and seems to be "more progressive than the progressive"; that is, its use reflects an internal perspective in which the narrator seems to place himself inside of an ongoing event. If, indeed, our proposal is correct that Spanish focuses attention on event boundaries and the temporal regions surrounding such boundaries, then the progressive phase may be seen as expressing a focus on an event as ongoing but bounded. One of our youngest examples of this form already reflects such a perspective. The frog is escaping from his jar while the boy and dog are asleep:

> (27) Estaban durmiendo y la rana calladita se iba escapando
> del frasco. [4;5, C]
> ‘They were sleeping and the frog very quietly was escaping
> (lit. went-IFV escaping) from the jar.’

Of special interest here is the contrast between progressive aspect (*estaban durmiendo*) and progressive phase (*se iba escapando*). Progressive aspect is used here for a process of indefinite duration, while progressive phase is used for the shorter event of escaping—with clear initial and terminal boundaries—temporally situated within the longer event of sleeping. (There is no obvious way of expressing this contrast in English.)

A similar perspective (also inconceivable in English grammar) is given by the use of the past progressive with a perfective auxiliary (e.g., *estuvo buscando* ‘was-PFV looking’). This form is very rare in our texts, being used only by one Chilean 4-year-old and two Peninsular 9-year-olds. It occurs only with the verbs *buscar* ‘look-for’ and *llamar* ‘call’, in contexts where these can be conceived of as bounded events with limited temporal extent. As such, in Coseriu’s terms, it seems to be more a "phase" than an "aspect." One Peninsular 9-year-old uses the form three times to describe a search that came to an end, yet was extended in time:

> (28) Estuvieron buscando por todas partes y que no la encontraban. [9;8, P]
> ‘They were-IFV looking everywhere and did not find-IFV it.’

Here the two dominant temporal perspectives of Spanish seem to be cast in clear relief: boundedness plus extension.

Continuative. By use of the semi-auxiliary *seguir* ‘continue’, with a gerund, Spanish allows for focus on the **protraction** of an event which is, itself, progressive. The form begins to be used by age 5. In the following example, the narrator has earlier noted that the bees were chasing the dog. After commenting on the simultaneous activities of the boy, he returns to the dog:

> (29) El perro seguía corriendo. [5;6, A]
> ‘The dog continued running.’

Younger children show their attention to the protraction of an event by simple repetition of the verb—again reflecting a particularly Spanish concern with this phase; e.g.:

> (30) Vino el perro, y corrió corrió. [3;8, C]
> The dog came-PFV, and ran-PFV ran-PFV.’

Regressive. Coseriu uses this term to indicate attention to imminent termination, looking back, as it were, from an already accomplished conclusion. He cites the forms *estoy/voy terminando de hacer* ‘I am/go terminating doing’, which do not occur in our texts. However, this phase is expressed by the adverbial *hasta que* ‘until’, which begins to be used by age 7. Apparently this phase is more complex conceptually than the others, due to its "regressive" or "retrospective" semantics. Note the attention in the following example to two event boundaries: the owl starts to chase the boy, and continues to do so until the boy terminates that phase by climbing a rock:

(31) Lo empezaba a perseguir el búho entonces hasta que
se subió a una piedra. [7;4, C]
'The owl started-IFV to chase him then until he climbed-PFV a rock.'

Conclusive. This phase is least grammaticized, marked by the semantically transparent verb *terminar*. We have already seen a 3-year-old example in (22): *Ya se terminó de caer* 'He already stopped falling'. Coseriu concludes, on the basis of the fact that the Romance languages have no specialized grammatical forms for the regressive and conclusive phases, that in these languages "the idea of the objective completion of an activity draws very little attention" (1976, p. 106). However, abundant examples from our texts would suggest that, on a broader level, Spanish does, indeed, pay a great deal of attention to the **boundedness** and **boundaries** of events—both inceptive and conclusive.

Egressive. Coseriu notes, by contrast, that Spanish (along with Portuguese and French) does have special periphrastic means for attending to an activity as seen from the viewpoint **after** its completion. He cites the Spanish form *acabo de hacer* 'I have just done'. Although this form does not occur in our stories, it is clear that the perfect, the adjectival use of the participle, and the adverb *ya* 'already', discussed above, indicate that Spanish-speaking children make use of ample grammatical means for expressing the egressive phase.

RESEARCH AIMS: MOTION EVENTS

With regard to states and processes, we have noted that Spanish and English differ in what is asserted and what is implied. A similar difference between the two languages with regard to assertion and implication is reflected in verbs of motion. Following Talmy (1985), we can distinguish the semantic elements of **Motion, Path**, and **Manner**. As pointed out above, in Spanish (as in all of the modern Romance languages) Motion and Path are conflated in the verb root, and Manner is given by the gerund of a separate verb. In English (and the rest of the Indo-European languages), Motion and Manner are conflated in the verb root, and Path is expressed separately by adverbial particles or prepositional phrases. The English lexicalization pattern allows for detailed description of a trajectory of motion by adding Path expressions onto a verb root. For example, in the sentence, *The bird flew down from out of the hole in the tree*, the verb simply specifies Motion in a particular Manner, leaving it to a series of particles to specify the trajectory of the Path: *down-from-out-of*. This trajectory corresponds to the Spanish verbs *bajar* 'descend' and *salir* 'exit', but they cannot be combined in a single compact expression as in English. Rather, one must say something like, *El pájaro salió del agujero del árbol, volando hacía abajo* 'The bird exited of the hole of the tree, flying towards below'. Note that Spanish prepositions provide minimal locative specification: *de* occurs twice in the preceding example. In *del agujero* it receives the meaning 'out-of' from the associated verb *salir*, while in *del árbol* it receives the meaning 'in' from general world knowledge about relations between holes and trees. When world knowledge is not sufficient, the Spanish-speaker is often required to provide a static "sketch" of the relevant components of a scene, so that the appropriate trajectory can be inferred. For example, while in English one might say, *The boy put the frog down into the jar*, a Spanish-speaker might say, *El niño metió la rana en el frasco que había abajo* 'The boy inserted the frog *en* (=in/on) the jar that was below'. The verb *meter* 'insert' implies that the preposition *en* is to be interpreted as 'in', and the relative clause *que había abajo* gives the meaning of 'down'. Thus in Spanish the trajectory 'down-into' must be inferred from a combination of Path verb and a static description of the location of the goal (jar), while in English the static location of the goal must be inferred from the Path description.

Note also that the Spanish participle, discussed above, provides a convenient means for encoding the static locations of participants in scenes. For example, we have found that English speakers say *He sat down in the water*, while Spanish speakers often say *Estaba sentado en el agua* '(He) was seated in the water'. Again, as we have seen above, where Spanish is more explicit about state, English is more explicit about process. We expected that Spanish children would come to provide elaborated static description of the components of scenes, implying detailed trajectories, while English-speaking children would come to provide elaborated descriptions of trajectories, implying the static arrangements of scenes.

FINDINGS: MOTION EVENTS

As expected, English children as young as 3 rarely use verbs of motion without locative particles. Although they sometimes simply say things like *climbing the tree*, they tend to elaborate the path, with additions such as *climbing up the tree, climbed on the tree, going up there*. Some path elaborations are quite complex even at this age; e.g., *going go all the way over in there, fell out of it, fell up onto something*. Three-year-olds use many verbs that conflate motion and manner, along with locative particles, such as: *jumped down, jumped out of the room, running down the hill, crawled on his back*.

By contrast, Spanish children tend to use simple verbs of direction, as shown in the following examples:

(32) El nene arriba de la vaca está corriendo. Se cayó. [3;6, A]
'The boy on top of the cow is running. (He) fell.'

(33) Está subido en el árbol. Salió un búho y lo botó. [3;8, C]
'(He) is climbed-PART in the tree. An owl came out and threw him.'

Often the source or goal of movement is indicated by a prepositional phrase, as indicated in the Italicized segments below:

(34) Se subió *al árbol*. Se cayó el niño. [3;3, C]
'(He) climbed *PREP the tree*. The boy fell.'

(35) El niño se subió *en un árbol*. ... Y luego el niño se cayó *del árbol*. [3;10, P]
'The boy climbed *PREP a tree*. ... And then the boy fell *from the tree*.

(36) Se cayó al agua. [3;6, A]
'(He) fell *PREP the water*.

(36) La rana salió *de la botella*. [3;6, A]
'The frog left *PREP the bottle*.'

Note that the prepositions (indicated by PREP in the English glosses), like the verb, indicate only general direction. The prepositions *a* and *en* both indicate movement toward a goal (compare *al árbol, en un árbol, al agua* above); *de* indicates movement away from a source (compare *del árbol, de la botella*). The actual trajectory must be inferred from the semantics expressed by the verb and the objects involved (e.g., *salir* and *botella*, *subir* and *árbol*). In English, by contrast, the trajectory can be easily specified: *from out of the bottle*, *up into the tree*, etc.

Spanish-speaking children seem to be aware of these features of their language. They tend to devote more effort in their narratives to establishing the static locations of objects and participants in scenes, as if sensing that it is difficult to independently specify trajectories. English-speaking children, by contrast, devote less attention to static description, attending more to the elaboration of trajectories, and leaving much of the arrangement of objects and participants to be inferred. These differences are consistent with our findings with regard to the encoding of states and processes, discussed above.

All of these language-specific characteristics of the encoding of states and processes, scenes and trajectories, seem to have consequences for the eventual construction of narrative discourse in the two types of languages. By age 9, English-speakers are quite adept in "compacting" a large amount of information about trajectories in a small number of clauses, while giving little attention to scene description. Consider, for example, the following narrations of an episode in which the boy, stuck on the deer's antlers, is thrown down into the water:

(37) The deer ran away with him, and dropped him off a cliff, in the
water. And they fell in the water. [9;9]

(38) He [boy] land's on his [deer's] head. And he starts running and
he tips him off over a cliff into the water. And he lands. [9;11]

Spanish narrations often give much more circumstantial description, setting the scene in separate locative phrases, especially relative clauses with existential or stative verbs, and then referring back to this scene with a general verb of motion. The following examples are typical of some of the older children:

(39) El ciervo le llevó hasta un sitio, donde debajo había un río.
Entonces el ciervo tiró al perro y al niño al río.
Y después, cayeron. [9;2, P]
'The deer took him towards a place, where below there was a river.
Then the deer threw the dog and the boy to the river.
And then, they fell.'

(40) El reno salió coriendo, con el perro a los pies. Cayeron juntos
a un precipicio, donde cayeron juntos al agua. [9;8, C]
'The reindeer came out running, with the dog at his feet.
The both fell at a precipice, where they both fell to the water.'

There are no evident differences between the three varieties of Spanish with regard to descriptions of movement, and most narrators do not provide the degree of elaboration shown in (39) and (40). However, this is clearly more a Spanish than an English pattern of narration, and may well have further consequences in the structure of literary narrative in the two languages.

CONCLUSIONS

As suggested in the introduction, languages differ in terms of their verbalized orientation to experience. We have seen that significant components of the differing orientations of Spanish and English have already been acquired by 3-year-olds, and that most of the major grammatical devices for talking about movement through time and space are acquired during the preschool period. It seems that these devices play a role in structuring "thinking for speaking." Although we have no evidence beyond our narrations of the "frog story," it seems that Spanish- and English-speaking children are acquiring different strategies for directing their attention to features of events for the purposes of describing them in words.

Acquiring Spanish as a mother tongue seems to orient one to features of the boundedness and extension of events, with careful attention both to what happens around temporal boundaries and between boundaries. This is evident in the systems of aspect and phase, with their wealth of grammaticized distinctions. The use of participles in a variety of grammatical frames orients one to the description of resultant and enduring states, often considered from the vantage point of the boundaries of the processes from which they emerge. Motion through space is attended to within the framework of aspect and phase, and the detailed mapping of path trajectories is less important than their relations to the boundary points of source and goal, themselves often conceived of as states. These features are common to all three of the varieties of Spanish we have studied, and seem to have a similar impact on the development of narrative.

We have paid less attention to the conceptual frameworks embodied in English grammar. But we have noted that acquiring English seems to orient one more to processes than to states, and that movement through space is more elaborated grammatically than conceptions of boundaries and boundedness of events in time. A wide range of lexical choices, combinable with locative particles, orients one to details of the manner of motion. The only grammaticized aspectual contrast is between progressive and a neutral non-progressive, and the retrospective nuance of the perfect seems to be relatively unimportant.

In learning to talk about events in Spanish or English, the child learns to take perspectives such as the ones we have attempted to sketch out in this study. The perspectives go beyond the semantics of individual verbal inflections and constructions, developing into an interconnected framework for the direction of attention in extended discourse.

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THE DEVELOPMENT OF CLAUSE CHAINING IN TURKISH CHILD LANGUAGE[7]

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Abstract

A standard picture storybook was used to elicit comparable narratives from Turkish speakers aged 3, 5, 9, and adult; conversational speech samples provided additional data for speakers aged 2-5. The study focuses on the acquisition and use of gerunds expressing temporal relations between predicates (*-ip, -ince, -erken, -erek*), along with the conjunction *ve*. The standard Turkish and European (English, French, German, Russian) grammars present only partial and inadequate semantic analyses of the use of these forms; and no discourse analyses are available. None of these works allow for an account of the differential developmental histories of these forms in child language. The current study shows that forms marking purely temporal relations are acquired by age 3, while expressions involved in discourse cohesion are later acquisitions, continuing beyond age 9. A developmental account is based on the semantic and discourse functions of the grammatical forms concerned, relying on the notion of **event coherence**. An adequate semantic analysis of *-erek*—the one gerund that is not used until age 9—reveals that this form is used to relate two phases of a situation (sequential or simultaneous) in the construction of a coherent event, constituting a complex category which is neither fully temporal nor causal in traditional terms, but which partakes of both temporality and causality within a narrative context. The adult use of the conjunction *ve* performs a similar function. Cognitive arguments are advanced to account for the late appearance of *-erek* and *ve*, since these constructions do not present problems in terms of syntactic complexity. The developmental account is strengthened by comparison of the acquisition of forms carrying out related functions in English child language.

Turkish, as a typical OV language, makes use of clause-chaining constructions in which one or more nonfinite clauses are followed by a finite clause. For example, the most ancient and widespread clause-chaining form in the Turkic languages is -°*p* (Menges, 1968; Serebrennikov & Gadžieva, 1979), as in the following Old Turkish example (von Gabain, 1950:120) and its modern equivalent:

(1) äšitip uqar biz (=işitip anlıyoruz)
hear-IP understand-PRES we
'we hear and (then) understand'

Such a form is commonly referred to as a *gerund, converb,* or *deverbal adverb* in Western European and American grammars, *deepričastie* in Russian, and *ulaç* in Turkish. Here I will refer to such forms as gerunds, allowing for easier comparison with similar forms in Indo-European languages. The range of terms, however, is suggestive: gerunds are derived from verbs and serve some sort of linking or conjoining function (*ulamak*) of an adverbial type. The linguistic elements to be conjoined are clauses, and, following Nichols (1983), I will refer to them as *conjunct* clauses. Since tense is carried only by the main clause in such constructions, the conjunct clause indicates relative tense with regard to the main clause. As Nichols points out (p. 246): "The basic opposition in all converb systems is *simultaneous* vs. *anterior*...: a simultaneous converb can be translated 'while

[7] Paper presented at Fourth Conference on Turkish Linguistics, Middle East Technical University, Ankara, Turkey, August 17-19, 1988.

VERB-ing', an anterior one 'having VERB-ed'" (p. 246).

This study, based on elicited narratives, examines children's acquisition of the four most frequent gerund suffixes in Turkish: *-(y)Ip*, *-IncEe*, *-Er-ken*,[8] and *-ErEk* (henceforth *ip*, *ince*, *erken*, *erek*). The following table gives rough meanings of these gerunds, along with their relative frequencies in (1) a small sample of children's books, and in the narratives gathered in the present study: (2) from adults, and (3) from children of ages 3, 5, and 9. While the individual frequencies vary with the content of the text, it is evident that all four forms are well represented in speech directed to children as well as in children's own speech.

Table 1

RELATIVE FREQUENCIES (PERCENTAGES) OF GERUNDS IN TEXTS

Gerund	Meaning	Children's Books	Adult Narratives	Child Narratives
X-*ip* Y	'X and (then) Y' 'having X-ed, Y'	38	40	27
X-*ince* Y	'when X, Y' 'as soon as X, Y'	9	18	23
X-*erken* Y	'while X-ing, Y'	23	30	27
X-*erek* Y	'(in, by) X-ing, Y'	30	12	22

The present study is part of a larger, crosslinguistic investigation of the development of temporality in narrative, designed in collaboration with Dr. Ruth A. Berman of Tel Aviv University, and carried out in Turkey, Israel, the United States, Germany, and Spain. The Turkish data were gathered by Dr. Ayhan Aksu-Koç of Boğaziçi University, Istanbul.[9] Speakers of four age groups—3, 5, 9, and adult—were asked to tell a story in response to a booklet that presents a clear plot without words in a series of 24 pictures (*Frog, where are you?* [Mayer, 1969]).[10] The action centers on a boy whose pet frog has escaped. The boy and his dog go searching for the frog in a forest, encountering various animals and undergoing a series of adventures before finally finding the frog.

[8] The suffix *-ken* is an adverbial auxiliary that can follow any predicate, including predicate nouns, adjectives, and existentials. However, in our texts it occurs only with aorist verb forms.

[9] The study was supported by the U.S.-Israel Binational Science Foundation (Grant 2732/82), the Linguistics Program of the National Science Foundation (Grant BNS-8520008), the Sloan Foundation Program in Cognitive Science (Institute of Cognitive Studies, University of California at Berkeley), and the Max-Planck-Institut für Psycholinguistik (Nijmegen, The Netherlands). Work on the present paper was carried out at the Institute of Human Development, University of California at Berkeley, with valuable assistance from Lisa Dasinger, Julie Gerhardt, Talmy Givón, George Lakoff, Eleanor Rosch, Ayşegül Talay, Cecile Toupin, and Robert Van Valin.

[10] There were ten narrators in each age group. Stories were segmented into clauses, with the following mean story lengths for each age group: 3-year-olds: 34.6 (SD=9.6), 5-year-olds: 49.9 (SD=ll.68), 9-year-olds: 38.l (SD=14.14), adults: 78.6 (SD=22.26). (Note that two 9-year-olds told exceptionally brief, schematic stories of 10 and 16 clauses.) The "frog book" method was developed by Michael Bamberg, and the first full-scale analysis of German stories appears in his 1985 Berkeley dissertation (Bamberg, 1987). Reports of other aspects of the study can be found in Berman (1987), Berman and Slobin (1987), Slobin (1987), and a forthcoming project volume edited by Berman and Slobin.

The plot is rich in causal and temporal sequences, surprises, and switches of attention between the overlapping endeavors of the boy and the dog. Thus it is fertile ground for the use of various clause-chaining devices.

A developmental analysis of use of the four gerunds presents a rather different picture from the overall pattern presented in Table 1. Table 2 shows the number of narrators at each age level who make use of a given gerund at least once. It is striking that *ip*, *ince*, and *erken* appear as early as age 3, and increase by age 5, while *erek* is not used by a single narrator younger than 9. This is the central puzzle of our analysis: **Why is *erek* frequent in speech directed to children, yet lacking in their own speech throughout the preschool period?** The goal of the study is to better understand the allocation of functions between these four gerunds by studying their development across age in a standard narrative context.

Table 2

NUMBER OF NARRATORS USING GERUND SUFFIXES AT LEAST ONCE

Age	Sample Size	*ip*	*ince*	*erken*	*erek*
three	10	2	1	2	0
five	10	8	4	3	0
nine	10	4	4	8	3
adult	10	10	5	10	5

We also have access to spontaneous speech samples from children in the age range 2;0-4;8, gathered in an earlier study (Slobin, 1982). These samples, of about a half-hour each, were recorded in semi-structured interaction with an investigator. Opportunities for clause chaining were rare, unless the child happened to volunteer a brief narrative or description of a temporal or causal sequence. However, as shown in Table 3, the developmental pattern of the frog stories seems to be supported in these spontaneous speech samples.

Table 3

NUMBER OF CHILDREN USING GERUND SUFFIXES AT LEAST ONCE

Age	Sample Size	*ip*	*ince*	*erken*	*erek*
two	13	0	4	2	0
three	18	3	5	3	1
four	13	3	4	3	0

The *ip*-suffix, which shows a growth spurt between ages 3 and 5 in the frog stories, is not used by any 2-year-old; and *erek* is used only once in the entire sample of 44 preschoolers. It is used in this instance to express manner of action, which, as we will see later, is probably the least complex of its varied functions. The adult is urging a girl of age 3;0 to be quick in retrieving a toy from her room, so that they can read a story. The child responds:

> (2) Geliyorum, çabuk yürüyerek gideceğim. [*3-year-old*]
> come-PRES-1SG quick walk-EREK go-FU-1SG
> 'I'm coming, quickly walking I'll go.'

The only gerunds used by 2-year-olds are *ince* and *erken*, suggesting that the meanings of these forms may be most accessible on cognitive grounds.

İNCE AND *ERKEN*

Of the four gerunds considered here, the meanings of *ince* and *erken* are most clearly specialized for **temporal** linkage. While they have additional nuances in non-narrative discourse, their temporal meanings are quite straightforward, and have been adequately and succinctly characterized by grammarians.

İNCE. Underhill (1976:381) defines *ince* as "'as soon as', or, with less urgency, 'when'"; and Lewis (1967:179) refines the temporal relation as "action just prior to that of the main verb." The first event in an *ince* linkage must have a right boundary; the second event can be bounded or unbounded, without affecting the reading of the temporal relation between the two events. There are no coreference restrictions between the two clauses. The only possible interpretation is that the onset of the second overlaps with or coincides with the end of the first event. The following three examples from the frog stories are indicative of the range of possible uses of *ince*:

> (3) *Situation: the dog falls from a window with a glass jar on his head, breaking the jar; sequenced, plotline events with different subjects; second event is PUNCTUAL.*
>
> Köpek düşünce başındaki şişe kırılıyor. [*adult*]
> dog fall-İNCE head-POSS-LOC-REL jar break-PASS-PRES
> 'When the dog fell the jar on his head breaks.'

> (4) *Situation: a beehive falls from a tree and breaks and the bees chase the dog; sequenced, plotline events with different subjects; second event is INCEPTIVE UNBOUNDED DURATIVE.*
>
> Arılar kovan bozulunca köpeği izlemeye başlıyorlar. [*adult*]
> bee-PL hive break-PASS-İNCE dog-ACC follow-INF-DAT start-PRES-PL
> 'When the beehive breaks the bees start to follow the dog.'

> (5) *Situation: the boy wakes up to find that his frog has escaped; sequenced, plotline events with same subject; second event is UNBOUNDED DURATIVE.*
>
> Çocuk sabah kalkınca kurbağayı arıyor. [*9-year-old*]
> boy morning get:up-İNCE frog-ACC search-PRES
> 'When the boy gets up in the morning he searches for the frog.'

Although *ince* presents the first event as in some way subsidiary to the second, the clause can, nevertheless, present new information. In (3) and (5) the *ince*-clause is plot-advancing, and is presented for the first time, while in (4) the falling of the hive has been mentioned earlier, and is being reinstated. Thus *ince* cannot be simply interpreted as a narrative backgrounding device

(Hopper, 1979). Given the close temporal relation between the two events, it might seem that *ince* has a nuance of causal linkage, but this is not necessary. Indeed, Kononov (1956:481) characterizes the main-verb event as one that "follows immediately, but without connection" to the preceding event marked by *ince*, citing a number of examples such as (6), in which the *ince* clause simply moves a participant onto a new scene or into a new phase of activity.

(6) Kahveden çıkınca yağmurun altında sokaklarda dolaştı.
cafe-ABL leave-İNCE rain-GEN under-LOC street-PL-LOC stroll-PAST
'Leaving the cafe he wandered in the streets in the rain.'

The basic temporal meaning of *ince* is accessible to the youngest narrators. For example a 3-year-old, having established that the dog has fallen from the window, says:

(7) Ondan sonra düşünce kırılıyor. [*3-year-old*]
it-ABL after fall-İNCE break-PASS-PRES
'After that, when (he) falls (it) gets broken.'

ERKEN. Kononov (1956:485) succinctly characterizes the meaning of *-(i)ken* as expressing "an action in the course of which another action takes place." Underhill (1976:401) notes that the suffix "normally corresponds to English 'while', but it need not always be translated 'while'; sometimes 'when' or simply '-ing' is more appropriate." The meaning is thus one of simple temporal overlap or simultaneity. The first event in an *erken* linkage must be durative and unbounded, with no restriction on the temporal contour of the second event. The only interpretation is that the temporal extent of the second event is entirely contained in that of the first, without any regard to relations between either left or right boundaries of the two events. Like *ince*, there are no coreference restrictions between the two clauses. The following examples from 3-year-old frog stories are indicative of the range of possible uses of *erken*, as well as the precocious use of this form in child speech.

(8) *Situation: the boy is sleeping and the frog sneaks out of its jar;*
background state and simultaneous event with different subjects;
second event is BOUNDED PERFECTIVE.

Çocuk uyurken kurbağa kaçmış. [*3-year-old*]
boy sleep-ERKEN frog escape-NARR.PAST
'While the boy was sleeping, the frog escaped.'

(9) *Situation: a deer carries the boy on his antlers and the dog*
runs alongside; simultaneous plotline events with different
subjects; second event is UNBOUNDED DURATIVE.

Geyik onu taşırken köpek kaçıyor. [*3-year-old*]
deer PRO.3SG-ACC carry-ERKEN dog run:away-PRES
'While the deer is carrying him, the dog is running away.'

(10) Köpek düşmüs aşağıya camdan bakarken. [*3-year-old*]
dog fall-NARR.PAST down window-ABL look-ERKEN
'The dog fell down while looking out of the window.'

Note that *erken*-clauses, like *ince*-clauses, can present either background or plot-advancing (foreground) information. In narratives with several co-acting participants, as the frog story, two participants can act simultaneously to advance the plot, as in (9).

DEVELOPMENTAL CONSIDERATIONS. *İnce* and *erken* perform clearly temporal functions which can be defined quite simply and directly. Aside from specifying the temporal relation between the events of the two clauses, these gerunds place no restrictions on the form or content of the main clause with regard to tense, aspect, modality, or the identities of predicate arguments. Children, in organizing their grammars, prefer one-to-one mapping between form and function (Slobin, 1985). As soon as the requisite temporal notions of sequence and simultaneity are available, the direct mapping of these notions onto *ince* and *erken* should provide no problem. Indeed, as noted above, we find use of these forms as early as age 2 in our spontaneous speech samples.

In terms of narrative organization, *ince* and *erken* mark a purely **local** or **temporally adjacent** relation between two actions, without necessarily knitting them together into a larger conceptual entity. As we will see, it is this conceptual ability that seems to play a major role in the acquisition of *ip* and *erek*

Comparisons with frog stories in other languages show a similar early ability to mark the temporal relations expressed by *ince* and *erken*. For example, English- and German-speaking 3- and 4-year-olds often mark the second clause for inception or sudden onset in a way that parallels the use of *ince* to indicate tight temporal sequence:

(11) *Situation: the boy and dog fall in a river.*
And then he splashed right in and then they started swimming. [*4-year-old*]

(12) Und dann ruft der Junge in so ein Loch und da kommt plötzlich ein Hamster raus.
'And then the boy calls into a sort of hole and then suddenly a hamster comes out.'

Simultaneity is marked by *when* by English 3-year-olds, parallel to *erken* by Turkish children of the same age, as shown in (13), which is equivalent to (8).

(13) The frog got out when he's sleeping. [*3-year-old*]

A similar close relation between development of temporal cognition and acquisition of clause-chaining devices is revealed in the parallel development of English *when* and its Turkish equivalents, the gerund *-dIktE* and related adverbial *-dIğI zaman*. All of these forms first appear at age 5 in our data, suggesting a common developmental basis. These forms are used, like *ince*, to relate a right-bounded event to a following situation, but without indicating the tight temporal sequence of *ince*. The use of *dikte* and *when* seems to reflect an emerging ability to present one event as backgrounded or subsidiary to another. This development is part of a transition from simple chaining of events to the interweaving of situations in more mature narrative discourse (Berman, 1986; Karmiloff-Smith, 1986).[11] In the following parallel examples from Turkish and English the narrator marks the beginning of a new episode by setting up a temporal frame:

(14) Çocuk uyandığında kurbağa yok. [*5-year-old*]
boy awaken-DİKTE frog NEG
'When the boy wakes up the frog is gone.'

(15) When the boy wakes up he can't find his frog. [*5-year-old*]

In sum, the meanings of *ince*, *erken*, and *dikte* emerge at the same ages across languages, reflecting a common basis in the development of cognitive abilities and discourse skills. The development of *ip* and *erek* is not so straightforward, since, as we shall see, these forms are more varied and discourse-sensitive in their functions.

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[11] The corresponding forms for 'when' in German, Spanish, and Hebrew also begin to be used at age 5 for functions of temporal backgrounding and marking of episode boundaries.

IP AND *EREK*

IP. This form is, in a sense, the most "neutral" or "empty" of the gerund suffixes, corresponding to a general conjunction such as English *and*. Consequently, some grammarians, like Underhill (1976:379), simply say: "This suffix has little meaning of its own"; going on to note only that "the two actions are either performed simultaneously ... or, more frequently, performed in sequence." Other grammarians, such as Kononov (1956:474), propose an open-ended range of meanings, describing *ip* as "expressing an action...that precedes another action, characterizing the predicate from the point of view of manner of action, time, reason, or condition." Clearly, what is at play is the range of contextually framed **inferences** that can be drawn between two or more syntactically linked events. What distinguishes both *ip* and *erek* from the other gerunds is the significant presence of this factor of inference in their interpretation. Grammarians who attempt to provide strictly temporal definitions fail, since these gerunds, unlike *erken*, *ince*, and *dikte*, are not inherently temporal, but draw their interpretations as simultaneous or successive linkages from context. On the other hand, grammarians who attempt to assign richer semantic meanings of cause or manner, fail for similar reasons.

Underhill is quite right in declining to assign a meaning to *ip*. As noted above, this gerund has been present throughout the documented history of the Turkic languages, and perhaps is so long-lived because of its neutrality. Its etymology seems to be unknown (Serebrennikov & Gadžieva, 1979:233), although Kuznetsov (1983) has proposed that—fittingly—it may be derived from an ancient verb *ba* meaning ‘tie together, conjoin’ (*privjazyvat’, prisoedinjat’*).

In our data, *ip* makes its major appearance at age 5, when children are beginning to link clauses together in narrative units, rather than mere temporal juxtaposition. The timing of its emergence suggests that it does not simply function as a conjunction, but rather serves a narrative function. Like *ince*, and *erken*, the clauses chained by *ip* "package" pieces of an event into a larger event, but without the immediacy of temporal relation indicated by those gerunds. The events either have a kind of separateness, as in (16), or the event of the *ip*-clause is a concomitant manner of action, even postposed as a subsidiary comment, as in (17).

(16) *Situation: the boy climbs onto a rock in order to call for his frog.*

Çıkıp taşın üzerine bağırıyor. [*5-year-old*]
climb-IP rock-GEN top-DAT call-PRES
‘(He) climbs onto the rock and (then) calls.’

(17) *Situation: the boy is lying on the ground, looking up at an owl in a tree.*

Çocuk seyrediyor başını çıkıp (=çıkarıp). [*5-year-old*]
child look-PRES head-POSS-ACC lift-IP
‘The child looks, lifting his head.’

Thus *ip*, like *dikte*, emerges at age 5 to begin to mark one event as, in some sense, backgrounded—or at least somewhat subsidiary to another in a narrative context. At first glance, *erek* would seem to perform a similar function. Therefore, we must turn to an examination of this elusive gerund in order to try to account for its absence in the 5-year-old texts.

EREK. As an introduction to the functions of *erek*, compare (18) and (19), which present the same situation from two slightly differing perspectives:

(18) Gülüp gitti.	(19) Gülerek gitti.
laugh-IP go-PAST	laugh-EREK go-PAST
‘He laughed and went away.’	‘He went away laughing.’

The essential difference seems to be that *ip* links **two** events, while *erek* presents two situations (actions, states) as part of **one** event. However, if *ip* can be designated as a relatively empty, all-purpose coordinator, *erek* requires a more subtle characterization, since it is much more limited with regard to the clauses that it can link. It is this subtlety, I suggest, that eludes 5-year-olds, and, to a great extent, has eluded grammarians.

Table 4 presents an overview of a number of attempts to define *erek* over the past century.

Table 4

ACCOUNTS OF *EREK* BY GRAMMARIANS

Redhouse (1884:111): The "distinctive use [of *erek*] is to indicate that, of two contemporary sustained actions expressed, the one, subsidiary, accompanies the other."

Deny (1921:888): *Erek* expresses an "extended concordant state." It can express simultaneity: *Bana bakarak gülüyordu* ‘Looking at me, he smiled’; manner: *Aglıyarak geldi* ‘He came crying’; or "a secondary action [that] is preliminary to the principal action": *Kedi eti kaparak kaçtı ‘Seizing the meat, the cat ran away’.*

Jansky (1954:136): *Ip* is used "when the action of the main verb follows that of the gerund in time, whereas the gerund in -*erek* is used when both actions—that of the gerund and the main verb—ensue simultaneously."

Kononov (1956:477): *Erek* expresses "an extended circumstance of themode or manner of action: (1) an action occurring simultaneously with the main predicate, with nuances of iterativity, momentaneity; or designation of the time of action; or presentation of a uniform, ongoing activity; (2) an action immediately preceding the action presented in the main predicate. (In this function the -*erek* gerund is grammatically synonymous with the -*ip* gerund, with the distinction that -*erek* primarily characterizes an action from the point of view of mode of action [*obraz dejstvija*], while -*ip* expresses mode of action, time, reason, and condition)."

Kissling (1960:192): *Erek* is used to designate a subsidiary action that is absolutely simultaneous with the principal action, whereby there is often an inner connection [*ein innerer Zusammenhang*] between the principal and subsidiary actions."

Ediskun (1963:252): *Erek* "(1) specifies the temporal relation to the following action, (2) refines the temporal extent relating a following action with respect to simultaneity or sequence, (3) can indicate a condition or contingency [*şart*]: *Hasta dinlenerek iyileşti* ‘The patient recovered (by means of) resting’."

Lewis (1967:177): *Erek* "denotes a single act or continued activity contemporaneous with or slightly prior to the main verb. ... It often corresponds to the English ‘by doing’ or ‘with doing’..."

Yüce (1973:18-19): The *erek*-clause "mainly gives the mode and manner [*Art und Weise*] of the event of the main clause and unfolds simultaneously with it. ... When the action of the subordinate clause does not give the mode and manner of the event of the main clause, then it generally precedes the main clause event in time."

Underhill (1976:379-80): *Erek* "is used for a single action, or one that is described as a single action, which takes place at the same time as the main verb or immediately preceding. ... This suffix is frequently used to indicate the manner in which the action of the main verb is performed."

Ivanov (1977:76): "To the extent that the verbal adverb -*arak* has the ability to take on a colorful [*krasočnoe*], ‘pictorial’ [*kartinnoe*] expression of the accompanying action, it can be used in all circumstances...in which one wishes to accentuate the ‘picturesque qualities’ [*živopisnost’*] of the subsidiary action, along with the fact that it is not semantically blended or merged with the main action."

The definitions that restrict *erek* to simultaneity are clearly wrong (Redhouse, Jansky, Kissling), as shown by Deny's example of a "preliminary action" marked by *erek* (*Kedi eti kaparak kaçtı* 'Seizing the meat, the cat ran away'). Ediskun's "simultaneity or sequence," however, is too broad. Kononov, Lewis, and Underhill appropriately limit the sequential reading to "immediately preceding" or "slightly prior" to the event of the main verb. But such definitions, being purely temporal, leave no grounds for distinguishing *erek* from the simultaneity of *erken* and the immediate succession of *ince*. If only temporality were at issue, we would expect *erek* to freely substitute for *erken* and *ince*—but it does not. The reason that it does not is hinted at by the various nuances in some of the definitions: "manner," "mode of action," "condition, contingency," "picturesque qualities," "inner connection between the principal and subsidiary actions." This range of groping attempts to characterize the nature of the "inner connection" (Kissling) between the two predicates suggests that, like *ip*, a meaning cannot be assigned to the gerund itself, but rather, we are in need of a characterization of the types of situations **framed** by *erek* and the sorts of **inferences** that are licensed by use of this form.

One intriguing solution—relying on aspectual meaning—has been offered by Johanson (1971). He observes that *erek* partakes of meanings of the past progressive *-Iyordu*, while *ip* relates to the simple past *-DI*. Thus, (18) *gülüp gitti* 'laugh-IP go-PAST' implies the sequentiality of *güldü (ve) gitti* 'laugh-PAST (and) go-PAST' (=He laughed (and) went away); while (19) *gülerek gitti* corresponds to *Gitti. Gülüyordu.* 'He went away. He was laughing [in so doing].' He concludes (p. 261):

> The function of *erek* and *iyordu* is to expressly turn off the principle of order (often suggested by *ip* and *di*), with resulting possible interpretations of 'simultaneity', 'subsidiary condition', 'commentary', 'instrument', 'reason', 'motivation', etc. Without going into the details of the use of *ip* and *erek*, we can ascertain that this use is not temporal, but is basically aspectual.

This suggestion certainly goes beyond the grammarians represented in Table 4, and the aspectual interpretation will be useful in further analysis; but it seems dissatisfying to characterize the function of one grammatical form as simply "turning off" the functions of a contrasting form. If this were the only issue, we should expect 5-year-olds to use both forms. There must be something about "the details of the use of *ip* and *erek*" that can take us further.

Johanson's attention to the inherent aspect of the subsidiary clause leads us to consider the *Aktionsart* of the main clause as well. When we do so, it begins to become clear that *erek* is involved in building **global event representations**, rather than just linking two clauses. Taking a more broadly cognitive approach, both the meanings and the inherent aspects of the two clauses are involved in arriving at an appropriate **inference** of the overall meaning of the clause chain. Compare (20) and (21):

(20) Hasta dinlenerek iyileşti. (*Ediskun*)
patient rest-EREK recover-PAST
'The patient recovered (by) resting.'

(21) Askerler şarkı söyleyerek kışlaya yürüdüler. (*Jansky*)
soldier-PL song sing-EREK barracks-DAT march-PAST-PL
'The soldiers marched singing to the barracks.'

Both REST-RECOVER and SING-MARCH form plausible events, the one causative/instrumental and the other accompanying activity/manner. Both have the general temporal meaning of 'overlap', but this meaning does not derive from "turning off the principle of order." Rather, inherent temporal qualities of the event presented by the **second** verb influence the interpretation of the connection between the two verbs. In (20) the second clause is inchoative (or perhaps ‘graded onset’); that is, one knows that the recovery was not present as the onset of the resting. In (21), however, both clauses are simply durative, and presumably totally overlap in time. Given the lexical meaning of ‘recover’ (entry into a new state), we would expect ‘sing-EREK’ to have an instrumental reading in (21):

(21) Hasta şarkı söyleyerek iyileşti.
patient song sing-EREK recover-PAST
‘The patient recovered (by) singing.’

However, if the temporal meaning of the second verb is ‘unbounded’, the reading is temporal overlap:

(22) Hasta şarkı söyleyerek oturdu.
patient song sing-EREK sit-past
‘The patient sat singing / sat and sang.’

Thus the interpretation of an *erek*-chain depends not only on the inherent progressive meaning of the gerund, but also on the Aktionsart of the main-clause verb, along with its lexical meaning.

What is at issue, then, is the use of *erek* **to link two or more phases of a situation into a single event**. It is this cognitive ability to mark two actions as constituent parts of a superordinate, **unnamed** event that seems to be beyond the ability of 5-year-olds. It is instructive to pull out the verbs chained by *erek* in the 9-year-old and adult frog stories and consider the extent to which they seem to encode unnamed global events. Table 5 schematically presents all of the *erek*-chains from the frog stories. The bulk of them (Group A) look like potential compound verbs, reminiscent of serial verb constructions in other languages (although some of the chains at the end of Group A are, admittedly, very specialized to this text). That is to say, one can imagine verbs meaning things like *çik-kaç) ‘leave-escape’, koş-geç* ‘run-pass’, or *düş-kır* ‘fall-break’, if the need to lexicalize such notions became sufficiently strong and frequent to warrant it. A smaller group of chains (B) present a subsidiary action as simultaneous with the main action, but clearly backgrounded to it, thus differing from *erken*, which presents two simultaneous events as more equal in status from the point of view of the narrative. And a single chain (C) presents a completed action as preparatory to the main action.

Table 5

EREK-CHAINS IN FROG STORIES

GROUP A

çık-*EREK*—kaç	'leave—escape'
koş-*EREK*—geç	'run—pass'
düş-*EREK*—kır	'fall—break'
bak-*EREK*—gör	'look—see'
gözlerini kapa-*EREK*—uyu	'shut eyes—sleep'
kovala-EREK—korkut	'chase—scare'
çık-*EREK*—korkut	'come out—scare'
çık-*EREK*—ısır	'come-out—bite'
çagır-*EREK*—yardım iste	'call—want help'
salla-*EREK*—kaçmasına sebep ol	'shake—cause escape'
el salla-*EREK*—yürü-*EREK*-uzaklaş	'wave—walk—depart'
selamla-*EREKTEN*—yol tut	'take leave—depart'
eline al-*EREK*—sev	'take in hand—love'
kız-*EREK*—getir-*EREK*—at	'get-angry—carry—throw'

GROUP B

tut-*EREK*—seslenmeye başla	'hold—start to call'
yaslan-*EREK*—de	'lean—say'
söyle-*EREK*—yaklaş	'say—approach'
işaret et-*EREK*—bak	'signal—look'

GROUP C

giyin-*EREK*—aramaga koyul	'get dressed—set out to search'

Several full textual examples of *erek*-chains summarized in Table 5 should help to illustrate the ways in which the situations depicted in the two clauses can be seen as phases of a single event.

Group A

(23) Kurbağa kavanozundan çıkarak kaçtı. [*9-year-old*]
frog jar-POSS-ABL leave-EREK escape-PAST
'Leaving his jar, the frog escaped.'

(24) Baykuş çocuğu kovalayarak onu korkuttu. [*9-year-old*]
owl child-ACC chase-EREK PRO.3SG-ACC scare-CAUS-PAST
'The owl, chasing the child, scared him.'

Group B

(25) Bir ağacın dalından tutunarak etrafa seslenmeye başlamış, kurbağasına.
one tree-GEN branch-POSS-ABL hold-EREK around call-INF-DAT start-NARR.PAST
'Holding onto the branch of a tree he started to call around, for his frog.'

Group C

(26) Hemen giyinerek hemen onu aramağa koyuldu. [*9-year-old*]
immediately get:dressed-erek immediately PRO.3SG-ACC search-INF-DAT set:out-PAST
'Immediately getting dressed, immediately he set out to search for him [frog].'

The Group A situations, (23) and (24), can be translated by English *by doing*, as noted by Lewis (1967:177). It is not possible to draw a temporal or conceptual boundary between the events presented by the two clauses: the frog, **in leaving** or **by leaving**, escapes; the owl, **in chasing** or **by chasing** scares the boy. Both verbs depict phases of a single event. In this sense, Ivanov's fanciful "colorful, pictorial expression" of an event seems appropriate. The Group A events are easily **picturable** as a continuous, seamless trajectory of action. If they are pictures, they are cinematic, rather than snapshots.

The Group B situations, as in (25), are somewhat different. The pictorial quality of (25) is more like a snapshot: we see the boy holding the branch and calling, but the holding is clearly a supporting element to the calling, and not a separate event. Again, we have two phases of a single event, but the overall event can be characterized as **while calling**, without the instrumental overtones of (23) and (24).

Finally, the single Group C example in our texts, (26), presents a situation as preparatory to a larger event: **having gotten dressed** a search can be carried out.

I have not labelled Groups A, B, and C because they all seem to be somewhat different versions of the same thing. What they have in common is a slightly retrospective view of a preliminary or subsidiary event that, in combination with the main-clause event, constitutes a whole: Kissling's "inner connection" with a little more cognitive detail. At this level of detail, the functions of *erek* are different from those of the other gerunds we have considered. The contrasts become clear if we consider the compatibility of the other gerunds with the verb chains of Table 5. (It is necessary to restrict the comparison to conjuncts with the same subject, since this constraint applies to *erek*.)

COMPARISON OF *EREK* AND *ERKEN*. None of the verbs chained by *erek* in Table 5 are chained by *erken* in the frog stories. *Erken*-linkages are not at all like compound verbs. Rather, they present a sequence of actions, with the first one beginning before the second and overlapping with it. A good example is a chain that includes both *erken* and *erek*:

(27) Pencereden dışarı bakarken de
köpek pencereden aşağı düşerek kavanozu kırıyor. [*adult*]
window-ABL out look-ERKEN EMPH
dog window-ABL down fall-EREK jar-ACC break-PRES
'While looking out of the window, the dog, falling down from the window breaks the jar.'

Here, 'fall-break' is clearly presented as a single event, occurring against the preceding and overlapping background of 'looking out of the window'.

COMPARISON OF *EREK* AND *İNCE*. None of the verbs chained by *erek* in Table 5 are chained by *ince* either. *İnce* linkages are also not at all like compound verbs. Rather, given the completive aspectual meaning of this gerund, the two conjuncts present clearly separate events. The only possible comparison is 'fall-break'; however, the *ince*-chain switches reference and requires a passive form of the main verb, thereby emphasizing a conceptual gap between the two events, rather than depicting them as phases of the same event, as in the *erek*-chain in (27). Consider (28), which presents example (3) again (also parallel to (7)):

(28) Köpek düşünce başındaki şişe kırılıyor. [*adult*]
dog fall-İNCE head-POSS-LOC-REL jar break-PASS-PRES
'When the dog fell the jar on his head breaks.'

COMPARISON OF *EREK* AND *IP*. As might be expected, the only gerund that overlaps functionally with *erek* is *ip*, given its openness to many contextual interpretations. (29) shows the compatibility of *ip* the with 'fall-break' scene:

(29) o da düşüp kavanozu kırıyor. [*adult*]
PRO.3SG EMPH fall-IP jar-ACC break-PRES
'He [dog] falls and breaks the jar.'

Such constructions seem to emphasize sequence, rather than package the two events into a larger whole. (29) translates more naturally as 'he falls and then breaks the jar', while the corresponding conjunct chain with *erek* (27) is close to 'having fallen, he breaks the jar' (Ayşegül Talay, pers. comm.). Overall, there are only about six scenes that, broadly, allow of both *erek* and *ip* expression in our frog story texts: 'fall—break', 'leave—escape', 'take-leave—depart', 'take—*act* [various actions]', 'lean—call', and 'say—go'. A number of other *ip*-chains seem to be built on a first clause that is completive or bounded with respect to the second, but in many cases it seems to be the narrator's choice to bind event descriptions more or less tightly into a global event, allowing for contrasts such as the three versions of the 'fall—break' scene presented above.

It is clear, therefore, that the meanings of *ip* and *erken* cannot be determined simply by the semantic contents of the two clauses. The contrast represents a choice in **narrative perspective**—and it is precisely this kind of narrative ability that develops somewhere between ages 5 and 9. It is of interest that the narrative perspective provided by *erek* has evolved recently in historical time as well. While all of the other gerunds we have considered have long histories in the Turkic languages, *erek* has developed primarily in the Oḡuz languages, making its first appearance in Anatolian manuscripts of the 13th-15th centuries (Yüce, 1973:15). Deny noted in 1921 (p. 890): "It is only recently that the use of the *-(y)erek* gerundive has undergone a great extension. Today it has taken over all the terrain lost by the *-(y)ip* gerundive." While we do not have the means to trace out this historical extension, it is suggestive to compare *ip*-chains in 5-year-old frog stories with *erek*-chains in 9-year-old and adult stories.[12]

DEVELOPMENTAL CONSIDERATIONS. A close look at 5-year-olds' uses of *ip* reveals anticipation of *erek* functions. These children begin to use *ip*-chains to mark the first conjunct as expressing a preparatory state or action to that of the main verb, or to express an activity or posture that is part of the action of the main verb. Note, for example, the following correspondence:

(30a) Yavruyu alıp ona bakıyorlar. [*5-year-old*]
baby-[frog]-ACC take-IP PRO.3SG-DAT look-PRES-PL
'They take a baby frog and look at it.' / 'Having taken...'

(30b) Bir tanesini eline alarak onu sevdi. [*9-year-old*]
one item-POSS-ACC hand-POSS-DAT take-EREK PRO.3SG-ACC love-PAST
'Taking one of them [baby frog] in his hand, he loved it.'

Thus there is some suggestive evidence in our data that, developmentally, *erek* takes over some of the terrain of *ip*.

More generally, this process can be seen as part of the development of narrative abilities. In order to construct *erek*-chains, the narrator must attend to two or more phases of an event. This ability emerges at age 5, crosslinguistically. For example, in describing the frog's escape from his jar, 3-year-olds are content to comment simply on the fact of his leaving, using a single clause with the verb *çik* 'exit'. However, 9-year-olds and adults break the scene into phases, and chain them as conjuncts: *çıkıp kaç* or *çıkarak kaç*. Five-year-olds, in both Turkish and English, break the scene into phases, but do not yet join them syntactically, as shown in (31).

(31) *Turkish 5-year-olds*:

Kurbağa kapağı açıyor çıkıyor yavaş yavaş.
frog door-ACC open-PRES exit-PRES slow slow
'The frog opens the door, goes out slowly slowly.'

Kurbaga dışarı çıkmış kaçmış.
frog outside exit-NARR.PAST run:away-NARR.PAST
'The frog went outside, ran away.'

English 5-year-old:
The frog got out of his bowl, and he went somewhere else.

Syntactic packaging, then, reflects more than simple increase in memory or attention, since 5-year-olds can analyze scenes and present their analysis in successive clauses. Furthermore, they are beginning to make flexible use of Turkish clause-chaining devices to knit some components of situations together into longer units. Thus they have the prerequisites for use of *erek*, but something is

[12] Our analysis would be greatly aided by a detailed account of the "terrain" taken over from *ip* by *erek*, but Deny does not say more, and I have not found any other mention of the contexts of the spread of *erek* in the Turkish, American, Western European, or Soviet literature.

missing.

Erek is difficult because, although it appears to link clauses on a temporal basis, its distinguishing characteristic really lies in its role in building global or composite event representations. If it were simply a temporal subordinator, it would be acquired along with *ince* and *erek*; if it simply contrasted with *ip* on features of aspect or sequentiality, it would be acquired along with *ip*. By examining children's errors in the use of *erek*, we can better pull apart its dimensions of difficulty.

CHILDREN'S ERRORS IN USE OF *EREK*. Children's speech errors are vanishingly rare in Turkish (Aksu-Koç & Slobin, 1985). The regular and semantically transparent agglutinative morphology of the language makes Turkish a noteworthy exception in the field of child language acquisition. Therefore it is especially interesting that the only two errors to be found in our materials occur in the use of *erek*. The fact that these errors are produced by 9-year-olds suggests that this form is especially troublesome. Since *erek*-chains are syntactically identical to those formed with the other gerunds, the difficulties must lie elsewhere.

Although *ince* and *erken* have no coreference restrictions, *erek* and *ip* require same subject in conjunct and main clause. The formal error in (32) is a subject switch between boy and owl:

(32) O da [çocuk] ağaca tırmandığında bir delik görerek
bir baykuş çıkıyor oradan. [*9-year-old*]
PRO3.SG EMPH tree-DAT climb-DİKTE one hole see-EREK
one owl exit-PRES there-ABL
'When he [boy] climbs the tree, seeing a hole, an owl comes out of there.'

More deeply, however, the child has not used *erek* properly to knit together two phases of a single event. The appropriate gerund would be *ince*, indicating the conceptual rupture between the two events. Perhaps 9-year-olds are still working on the type of event that can be framed by *erek*. While we cannot make much of this one error, it suggests a problem in the managing of coreference, which will be taken up later.

The other error in the use of *erek* is not grammatical, but is an infelicity in narrative organization. The *erek*-clause must always be backgrounded, in some sense, to the main clause ("subsidiary," "preparatory," etc.). In the following example the child is describing a picture in which the boy climbs a tree, thinking that his frog is hidden in a hole. Note the syntax of the preceding English sentence: the adverbial phrase "thinking..." gives the background motivation to the main event, "climbing." In example (33) the narrator has reversed this relation:

(33) Çocuk ağaca çıkarak kurbağanın bir deliğe saklanmış
olduğunu sandı. [*9-year-old*]
child tree-DAT climb-EREK frog-GEN one hole-DAT hidden
be-NOM-POSS-ACC think-PAST
'Climbing a tree, the boy thought the frog was hidden in a hole.'

Clearly, more is involved in learning the use of *erek* than restrictions of aspect, reference, and the semantics of phases of events. This gerund is, essentially, a narrative form, and its proper use requires an ability to manage attention flow in narrative.

In spite of these two errors, the overall use of *erek* by our 9-year-old narrators is not markedly different from that of adults. (The only significant development is in longer chains, often using several different gerunds, as discussed below.) We have only scanty data on the earlier use of gerund forms, between ages 5 and 9, when much interesting development must occur. One suggestive error from Aksu-Koç's unpublished data is a 6-year-old's description of a picture of a reclining cat as *yatarak pisi-pisi* 'lie-EREK pussy', rather than the present participle, *yatan*. In an abstract sense, both forms have a continuative or durative meaning. Following our earlier suggestion that *ince* and *erek* are easily acquired because they directly map temporal categories, this error may reflect a later attempt to do the same with *erek*. Note that both present participle and gerund can co-occur in parents' descriptions of events to very young children, as in the following personal observation of a mother's speech to a child of 2;0. (And note, also, that both forms can be conveyed by -*ing* in English.)

(34) Bak, yatan inek var. Yatarak yemeğini yiyor.
look, lie-AN cow EXIS. lie-EREK food-POSS-ACC eat-PRES
'Look, there's a cow lying down. It's eating lying down.'

Our limited data suggest that children begin to learn *erek* in descriptive contexts of simultaneous activity, indicating either temporal overlap or manner, as in (34), and as in (2), our only spontaneous example of *erek*: *yürüyerek gideceğim* 'I'll go runningly' [age 3;0]. Their eventual task is to move away from such semantic interpretations to the event-building and discourse uses that characterize the full use of the gerund.

SWITCH REFERENCE. The error in (32) suggests that *erek* may also pose problems in the domain of switch reference. Recall that *ip* and *erken* require same subject in conjunct and main clause, while *ince* and *erken* are open in this regard. Considered within a crosslinguistic framework of switch-reference systems (Haiman & Munroe, 1983), the pattern for *ip*, *ince*, and *erken* seems to match a universal for same subject (SS) and different subject (DS) markers. Haiman and Munroe (p. xiv), following a suggestion by Longacre (1983), propose that, diachronically, "SS markers originate as temporal successive markers; DS markers originate as temporal overlap markers." In Turkish, *ip* is primarily a successive marker, and is SS. *Erken* is exclusively an overlap marker, and *ince* typically marks overlap between the end of one action and the beginning of another. These two overlap markers can be either SS or DS. The Turkish pattern is consistent with Haiman and Munroe's predicted universal: "there will be no language in which simultaneous marking can ever be interpreted as SS exclusively; and no language in which sequential marking can be interpreted as DS exclusively."

Erek, however, does not fit neatly into this universal formulation. When its interpretation is succession, it is, appropriately, SS; therefore, as predicted, it is a sequential marking that cannot be interpreted as DS exclusively. However, when its interpretation is overlap, *erek* is still, exclusively, SS. Perhaps, then, it is only illusory that *erek* expresses true sequence. If it seen, rather, as linking two phases of a single event, it falls outside of the temporal framework of sequence vs. simultaneity, and therefore does not violate Haiman and Munroe's proposed universal. If children are prone, however, to interpret such connectives as essentially temporal in meaning, they will make errors such as (32), and will face some overall difficulty in assigning the gerund to its proper function.

USE OF THE CONJUNCTION *VE*.

In addition to the widespread use of gerunds, Turkish also has recourse to coordination of finite clauses using the borrowed conjunction *ve* on the Indo-European and Semitic model. In frog stories from those language groups—English, German, Spanish, and Hebrew—*and*, *und*, *y*, and *ve* provide the earliest and most frequent means of stringing clauses together. Therefore it is striking to find that *ve*, in Turkish, is a **mature** form, almost entirely lacking in children's narrations. Table 6 shows the number of narrators and mean number of uses of *ve* for each age group.

Table 6

USE OF *VE* IN FROG STORIES

Age	Sample Size	Number of Narrators	Mean Number of Uses
three	10	0	0
five	10	3	1
nine	10	5	1.2
adult	10	8	5.9

An examination of the texts reveals that *ve* most frequently functions like *erek* to link together phases of an event into a larger narrative unit. It is often used to link the same pairs of verbs as the *erek* chains presented in Table 5: *çıkıyor ve kaçıyor* 'leaves and escapes', *çıkıyor ve ısırıyor* 'comes out and bites', and so forth. Most typically, it is used by adults to span phases of events linked by different gerunds, often allowing for switch reference within construction of an episode-level unit. The following are typical examples:

(34) Kurbağa çıkıyor kavanozdan ve kaçıp gidiyor.
frog leave-PRES jar-ABL and escape-IP go-PRES
'The frog leaves the jar and having escaped goes away.'

Bir baykuş da o kovuktan çıkarak çocuğu korkutuyor
ve ağaçtan düşüyor.
one owl EMPH that hole-ABL exit-EREK child-ACC scare-CAUS-PRES
and tree-ABL fall-PRES
'An owl, coming out of that hole, scares the boy
and (he) falls from the tree.'

Köpek ağacı sallayınca arı kovanı düştü
ve tüm arılar dışarıya çıkıp uçmaya başladılar.
dog tree-ACC shake-İNCE bee hive fall-PAST
and all bee-PL out exit-IP fly-INF-DAT start-PAST-PL
'When the dog shook the tree the bee hive fell
and all of the bees, coming out, started to fly.'

These few examples are sufficient to show the richness of narrative syntax allowed by a combination of gerunds and *ve*. While the capacity to use *erek* develops sometime between ages 5 and 9, it is only later than 9 that children master the full range of narrative organization and its syntactic expression, packaging larger sequences of events as narrative units. The late and specialized development of *ve* shows that this form, although the translation equivalent of Indo-European and Semitic 'and', is, in fact, quite a different kind of connective, since it takes its place among a rich connection of gerunds, many of them firmly rooted in the first few years of children's language acquisition, and in the ancient, pre-recorded history of the Turkic languages. The meanings of any one of these forms cannot be understood without a consideration of their mutually interactive roles in the verbal construction of events.

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