TWO PAPERS ON THE DEVELOPMENT OF PERSPECTIVE IN CHILDREN'S NARRATIVES

Passives and Alternatives in Children's Narratives in English, Spanish, German and Turkish[1]

and

Factors of Language Typology in the Crosslinguistic Study of Acquisition[2]

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Abstract:

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The paper takes a functionalist approach to the development of the passive, considering it as one of a set of alternative constructions that carry out related functions in connected discourse. Elicited narratives of children (aged 3-9) and adults, in four languages, are examined in terms of speakers' options for construing events. The analysis is based on a model of simultaneous determination of event construal on four dimensions: topic, loci of control and effect, event perspective, and degree of agency. The findings suggest that children learn to manipulate perspective in discourse in accordance with typological features of the native language. Abstract:

FACTORS OF LANGUAGE TYPOLOGY IN THE CROSSLINGUISTIC STUDY OF ACQUISITION

In the course of language acquisition, the child becomes sensitive to sets of interacting grammatical constructions and lexical forms that characterize the TYPE of language that is being acquired. Therefore, one cannot make direct crosslinguistic comparisons with regard to the acquisition of particular forms, since any particular form is part of a system. This paper presents three small case studies of the role played by larger linguistic systems in the acquisition of individual forms and constructions in several languages, using elicited picture-story narratives gathered from children aged 3-9 and adults ("The Frog Story Project"). (1) An analysis of the development of forms meaning 'and' in English, German, Spanish, Hebrew, and Turkish demonstrates that one cannot rely on translation equivalents in comparing development of a grammatical element across languages. (2) An examination of the development of relative clauses in these langauges shows that the development of a construction must be considered with relation to a range of forms and functions within a given language. (3) A comparison of means of expression of states and processes in English and Spanish suggests that children come to systematically structure experiential domains in terms of typological characteristics of the ambient language, with differing results on the level of verbal expression.

All three case studies show that typological characteristics influence the structure of narrative, especially with regard to the management of information flow. At the same time, psychological factors of cognitive and communicative development are responsible for common patterns in the development of narrative ability in all five languages considered.

PASSIVES AND ALTERNATIVES IN CHILDREN'S NARRATIVES IN ENGLISH, SPANISH, GERMAN, AND TURKISH[1]

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Abstract

The paper takes a functionalist approach to the development of the passive, considering it as one of a set of alternative constructions that carry out related functions in connected discourse. Elicited narratives of children (aged 3-9) and adults, in four languages, are examined in terms of speakers' options for construing events. The analysis is based on a model of simultaneous determination of event construal on four dimensions: topic, loci of control and effect, event perspective, and degree of agency. The findings suggest that children learn to manipulate perspective in discourse in accordance with typological features of the native language.

Almost all research on children's development of voice deals with the English passive. Initially stimulated by the proposed system of underlying relations between active and passive sentences elaborated in the transformational grammar of the 50s, a vast 30-year literature has probed children's comprehension and production of passive sentences, and their acquisition of the syntactic and semantic constraints on these structures in English and several closely-related Indo-European languages. In this psycholinguistic research tradition, the passive is seen as a syntactic puzzle to be solved by children.[2] However, the concern of the present study is to explore how children make *use* of passives in narrative, rather than how they solve the formal puzzles. Accordingly, almost none of this literature is directly relevant to the task at hand. As soon as one turns from isolated sentences to connected discourse, it is evident that passives serve well-described functions of information packaging and information flow, and that they exist as *alternatives* among collections of options provided by any particular language.

After having begun to solve the morphosyntactic challenges posed by a linguistic construction, children are faced with two interlocking tasks. They must learn the range of meanings and discourse functions expressed by the construction. And, at the same time, they must learn the range of available *alternative* forms for each of these functions. English-speaking children use some passive constructions by age 3, and are still working on others at age 10 (Horgan, 1978). But we know almost nothing about the *collection* of forms that children use in a functional discourse domain that includes passives and other alternatives. It is impossible to understand the development of passive constructions in any one language, or to compare development across languages, without taking into account the position of the passive as one of a set of alternative constructions in each language under study.

The two interlocking mapping problems that face the child have received detailed attention in functionalist aproaches to linguistics in recent years. For example, Shibatani (1985) has proposed a "passive prototype" to account for extended uses of the passive in various languages (spontaneous, potential, honorific, and plural formations), as well as affinities between passives, reflexives, and reciprocals. In recent reviews, Keenan (1985) relates passives, crosslinguistically, to a set of "foregrounding constructions" including topicalizations and left-dislocations, and Foley and Van Valin (1985) discuss "a wide variety of syntactic information packaging options" (p. 299), including passives, antipassives, left-dislocations, topicalizations, dative shift, and clefts. Givón (1990) points to "a family of syntactic constructions" related in terms of the semantics of transitivity and the pragmatics of perspective. The critical pragmatic dimension is relative topicality of agent and patient, with

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[2] For the most recent, and far-reaching solution, see Pinker (1989). For reviews of the literature see Budwig (1990), de Villiers & de Villiers (1985:96-103), and Pinker, Lebeaux, & Frost (1987).

passives representing defocusing of agent and concomitant topicality of patient (or some other non-agent participant). With the shift in pragmatic perspective away from the agent, there is a corresponding tendency to move away from the semantics of high transitivity (in the sense of Hopper & Thompson 1980). However, the pragmatics of information flow and the semantics of transitivity, though related, are not totally interdependent, and, as a consequence, languages provide a family of constructions representing different "mixes" of these two dimensions. A family of constructions gives speakers *options for construing events* for various discourse purposes. It is the goal of this paper to present a small case study of the development of passives and alternative constructions, across several languages, within a broader framework of semantic/pragmatic *event construal*.

A prototypical transitive event has two participants: Agent and Patient, and three dynamic components: CAUSE, BECOME, and STATE (e.g. *John broke the glass* = Agent [*John*] CAUSE Patient [*glass*] BECOME STATE [*broken*]). An event can be re-construed by changing the salience of one or more of these five elements. In the families of constructions to be considered here, there is a decrease in the salience or importance of Agent and CAUSE, and a corresponding increase in the salience or importance of Patient, BECOME, and STATE.

Languages provide a range of means for up- and downgrading elements, and doing so to varying degrees; as a consequence, families of constructions can be arrayed in *clines* of types of event construal. I will argue that such clines result from the joint operation of four classes of communicative decisions that underlie any utterance. These decisions are not serial choices, but rather reflect dimensions of the overall cognitive scheme of an event that a speaker chooses to communicate linguistically.

Event Construal Dimensions:

(1) Selection of topic.
(2) Selection of loci of control and effect.
(3) Selection of event perspective: Cause, Become, State.
(4) Selection of degree of agency.

These dimensions, jointly, determine linguistic encoding of an event: number of participants mentioned, syntactic roles of participants (in one or more clauses), word order and construction type, and lexical choices. The first three dimensions have been well-explored in the literature on voice (represented by a plethora of terms). The fourth dimension locates the domain of voice within a larger domain of the expression of *agency*, broadly conceived, including lexical semantics and interclausal relations.[3]

The dimensions are elaborated below, in the context of a crosslinguistic developmental study of narrative. The data are transcriptions of narratives elicited by a picture storybook, *Frog, where are you?* (Mayer, 1969), making it possible to study the range of constructions used across speakers to present particular scenes and episodes. The languages are English, Spanish, German, and Turkish; narratives were collected from preschool- (3-5 year-old) and school-age (9 year-old) children and adults.[4] The languages present the following relevant characteristics:

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[3] This dimension seems to have the same cognitive basis as Van Valin's (1990) "agentiveness," used to account for split intransitivity in Acehnese and Tsova-Tush. He proposes "non-agentive/agentive" as a "primary semantic parameter." In the present paper, agentiveness is seen as a continuum.

[4] These languages were selected, along with Hebrew, for their systematic contrasts in tense/aspect. They are by no means an ideal sample for a study of voice, but they are useful in posing preliminary questions of the interaction of cognitive and discourse factors.

English. SVO, full and agentless passives (*be* / *get* + participle, agent in *by*-phrase), fixed word order, initial topic and final focus.

Spanish. SVO, OV with clitic pronoun, full and agentless passives (*ser* 'be' + participle, agent in *por*-phrase), reflexive mediopassive, fronting of non-subjects with clitic pronouns and object-marker *a*, initial topic and final focus.

German. SVO main clause, SOV subordinate clause, full and agentless passives (*werden* 'become' / *sein* 'be' + participle, agent in *von*-phrase), reflexive mediopassive, limited possibility of word-order variation, initial topic and final focus.

Turkish. SOV, agentless passives (inflectional), flexible word order, initial topic and preverbal focus.

Although the data are severely limited, both in range of language types and numbers of narrators, they are sufficient to set forth a framework of analysis. We will examine four scenes from the stories, all of which elicit non-active voice (passives, mediopassives, middles) from some narrators in each language. The four scenes represent situations of varying complexity and event characteristics. For each scene, the data present a range of encodings resulting from choices on the four *Event Construal Dimensions*. Comparisons are made between the four languages, followed by developmental considerations.[5]

[5] The following numbers of narrators provided descriptions of the scenes analyzed here. **English** (U.S.A.): 3 yr.—5, 4 yr.—11, 5 yr.—11, 9 yr.—12, adult—10. **Spanish** (Spain): 3 yr.—11, 4 yr.—11, 5 yr.—11, 9 yr.—12, adult—11. **German:** 3 yr.—12, 5 yr.—12, 9 yr.—12, adult—12. **Turkish:** 3 yr.—6, 5 yr.—10, 9 yr.—10, adult—10.

EVENT CONSTRUAL DIMENSIONS

The Chasing Scene

The central protagonists of the 24-page "frog story" are a boy and his pet dog, who go out into the countryside in search of a runaway pet frog. After various adventuresome encounters and near disasters, they are reunited with the lost pet. In the "chasing scene," the dog has managed to knock down a beehive that was hanging from a tree, and is pictured running away from a swarm of bees. Both the dog and the bees have been on the scene for the preceding three pictures.

Selection of topic

In this scene, both participants are animate and highly active, and neither is new. In each of the four language groups, 55-65 percent of the narrators select the bees as topic and, accordingly, as subject of a transitive verb (variants of ‘chase’). Since our interest is in passives, however, we will follow those narrators who, for various pragmatic reasons, have chosen to defocus the bees, selecting the dog as topic. (Various factors of empathy and plot continuity contribute to topic selection. These factors are fairly well understood, and lie outside of the range of issues considered here.)

Selection of loci of control and effect

Choice of topic does not necessarily commit the speaker to the identification of actor and undergoer. One could, for example, say, "The dog has gotten the bees to fly out of the hive." However, almost all narrators construe this event as one in which the dog is the victim. (We will see below, in an event concerning the boy and a deer, that the identification of controller can be less determined by objective event characteristics.)

Selection of event view

The designations of the three event views reflect the familiar tripartite analysis of verbs in terms of the primitives CAUSE, BECOME, and STATE. In the present framework, however, the terms are applied to cognitive perspectives on events, rather than to verbs. A *Cause-View* represents an event as having an actor that, in some way, causes a change of state in an undergoer; a *Become-View* orients to a change of state without attribution of external causality; and a *State-View* simply orients to a state in itself.[6] With dog as topic, this scene can be construed in terms of two possible event views. The most common is a Cause-View, in which the bees play a controlling role in the dog’s actions (e.g., "The dog is being chased by the bees"). Some narrators, however, take a Become-View, selecting the dog as actor, but not controller (e.g., "The dog was running").

Selection of degree of agency

Having chosen dog as topic and locus of effect, bees as controller, and a Cause-View, the narrator still has a range of options open. "Degree of agency" refers to a construal of the *entire* event: its dynamic and motivational loading, the extent of its consequences, etc. Compare, for example, "The dog was hotly pursued by the bees" and "The dog was running away with the bees following him." Agency can be heightened or diminished by lexical choice of verb and associated adverbs, and can be

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[6] This framework has obvious parallels to Croft (1990) and Foley & Van Valin (1984), with roots in Dowty (1979). When event views are encoded in single verbs, *Cause-View* results in Accomplishments, *Become-View* in Achievements and Activities, and *State-View* in States. In my treatment, however, these "views" have encoding consequences beyond the choice of verb class, and even beyond the clause. For example, the following German narration takes a Cause-View with the dog as topic and the bees as controllers, relating the dog’s activity in the first clause to the role of the bees in the second: *Und der Hund, der rennt auch ganz schnell weg, weil die Bienen hinter ihm her sind* ‘And the dog, he runs away really quickly because the bees are after him’.

diminished by placement of the controller in a peripheral phrase. Information placed in a coordinate or subordinate clause can modify the degree of agency in the main clause.[7] It is this dimension of degree of agency that gives rise to a family of constructions that extends beyond the domains of voice and topicalization. The notion of "degree" suggests a cline. However, lacking any cognitive metric, let us consider three intuitive levels, *high*, *mid*, and *minimal* degrees of agency.

High degree of agency. I will assume that active verb forms represent a higher degree of agency than passives. All four languages under consideration provide means for topicalizing the patient while maintaining active verbs.

> **English.** Although English allows for topicalization and left-disclocation, such forms did not occur in the stories. However, high agency can be expressed in an explanatory subordinate clause with a verb in active voice: *The dog raced away because the bees were chasing him*.[8]
>
> **Spanish.** Active verbs occur in sentences with object fronting. Although it has frequently been proposed that object fronting in a language like Spanish plays the same role as passive constructions, I would suggest that this construction represents a higher degree of agency, since passives also occur in the Spanish data.[9] Two orders of left dislocation occur with reference to the chasing event: *Al perro le perseguan las avispas* 'OBJ+DEF dog CL.PRO chased+PL the wasps'. *Le persguan al perro las avispas* 'CL.PRO chased+PL OBJ+DEF dog the wasps'.
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> **German.** There are no instances of OVS order, although they are possible in German; however, the action of the bees occurs in coordinate or subordinate clauses with active verbs, as in English (see footnote 6, above, for an example).
>
> **Turkish.** OSV orders occur, sometimes with a topic particle (-*DE*) following the first noun: *köpeği de arılar kovalıyormuş* 'dog+ACC TOP bees were+chasing'.

Mid degree of agency. This is the realm of the passive construction. Full passives are available in English, Spanish, and German, and occur in all three languages: *The dog is being chased by the bees*. *El perro es perseguido por las abejas* 'the dog is chased by the bees'. *Inzwischen wird der Hund von einem Wespenschwarm verfolgt* 'meanwhile the dog is followed by a swarm of wasps'. Turkish has only agentless passives, and in none of the four languages were agentless passives used for this event (probably because it does not present a resultant state; see below). I would suggest, however, that such forms encode a lower level of agency than full passives.

English also provides the option of the *get*-passive: *The dog is getting chased by the bees*. This form differs from the family of constructions considered here in that it suggests that the *patient* has a degree of agency or responsibility, as well as the agent. Budwig (1990) reviews numerous proposals that the *get*-passive deviates from prototypical agency in that the patient "shares responsibility," "plays a causal role," or "catalyzes" the action in which it is involved, and that the action is often to the detriment of the patient. She presents evidence that preschool-age children use both *get*- and *be*-passives,

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[7] I will limit myself to event construals in one or two clauses. Obviously, all of these dimensions can be manipulated in longer stretches of discourse, as occurs in some narrations. For example: *Pero de repente [el niño] se dió cuenta que su perro sala corriendo a toda prisa y que detrás de él venan muchas abejas que queran castigarle por haber roto su casa* 'But suddenly the boy realized that his dog went running by at full speed and that behind him came many bees that wanted to punish him for having broken their house'. Consideration of such elaborated descriptions would carry us into broader realms of discourse organization.

[8] All italicized examples come from collected narratives, with no indication of age. Developmental considerations are taken up below.

[9] However, there is also a register difference between the two constructions; only adults use passives, while preschoolers use object fronting in their stories.

preferring the former for comments about animate patients that are negatively affected. Both forms occur in our stories, beginning at age 4. There is no independent evidence that individual narrators distinguish between the two forms, but it is clear that the event is partially caused by the dog, who suffers the consequences, thus creating a favorable context for a *get*-passive. In other languages, a degree of agency is discursively attributed to the dog, supporting the suggestion that this dimension of event construal is relevant when an animate patient is topicalized. This is evident, for example, in the extended Spanish description of the chasing event in footnote 7, above.

Minimal degree of agency. There are two levels of minimal agency with regard to this scene. In both of them, a Become-View is taken, but with an indication that the activity is telic. In some descriptions, the bees are mentioned in an oblique phrase or adjoined clause, suggesting that they contribute some degree of agency to the event. (E.g., *The dog was running away from the bees. / The dog raced away because the bees were chasing him*.) At a lower level of minimal agency, the bees are not mentioned at all, but the meaning of the verb implies that the dog's action is caused, or at least has a source; e.g., *The dog was running away* [from something]; (Turkish) *Köpek kaçıyor* 'dog escapes'. Conceptually, these descriptions seem to lie at the border between a Cause-View and a Become-View, due to lexical indication of a minimal degree of agency. The preceding two sentences represent the lowest degree of agency possible (with respect to the bees). Below this level, one takes a pure Become-View, with no hint of source or goal. If one simply says (as some young narrators do), *The dog was running*, the dog is no longer locus of effect, and one ends up with a one-participant event. Note, however, that intransitive syntax does not always encode a totally non-causal event view. In *The dog runs away/escapes* there is still a hint that locus of control lies outside the dog. Syntax and lexical semantics jointly reflect event construal.

The Deer Scene

This is a more complex scene, allowing of varying interpretations of locus of control and responsibility. The boy climbs up onto a rock surrounded by bushes, holding onto apparent branches that turn out to be the antlers of a deer, and the deer runs off with the boy caught on its antlers. The central feature of this event is that it is accidental and surprising, to both the boy and the deer. It thus invites interpretations of varying degrees of agency.

Selection of topic and control locus

Either boy or deer is chosen as topic, with no clear pattern by age or language. When deer is chosen as topic, it is also seen as actor; topical boy, however, is seen either as actor or undergoer.

Selection of event view

With deer as topic, narrators take a Cause-View: the deer lifts/carries/takes... the boy. The syntax is canonical active but, as we shall see, lexical choices reflect varying degrees of agency. With boy as topic, narrators use a greater range of options. In Cause-Views with deer as actor, we find object fronting and passive constructions; in Become-Views there are verbs of motion and inchoative/middles; and in State-Views, locative and participial constructions.

Degree of agency: Cause-View with deer as topic

The diminished agency of the deer in this scene is often marked by lexical choice, using a fairly neutral verb such as *get* in English (e.g., *a deer got the boy*), or equivalents of 'take' in all four languages. There are frequent attempts to introduce the horns as quasi-instrument, as if indicating the involuntary action of the deer; e.g., *it got him by his horns, a deer caught him between his horns*. And there are adverbial additions underlining diminished agency, such as: *The deer pops out of the rock and, after being disturbed, starts giving him a ride, unintentionally*.

Degree of agency: Cause-View with boy as topic

As in the Chasing Scene, high agency is encoded in Spanish and Turkish by means of object fronting in clauses with active verbs: *Le cogió un ciervo* 'CL.PRO picked.up a deer'. *Çocuğu boynuzlarının arasına alıyor* 'boy+ACC its+horns between takes' [=(the deer) takes the boy between its horns]. Full passives occur in English and German: *The boy has been picked up by some antlered beast*. *He got picked up by a deer*. *Dann wird er vom Hirsch aufgegabelt* 'Then he is picked up by the deer'. Again, as in the Chasing Scene, I will consider passive clauses to express a lower degree of agency than active clauses.

Degree of agency: Become-View with boy as topic

These event construals attribute no agency to the deer. Rather, they present the boy as coming into a locative relation with the deer or its antlers.

Active voice. The event can be seen from the perspective of the boy as subject of a verb of motion. For some of the youngest narrators, equivalents of 'climb onto' are used in all four languages (e.g., *The boy is climbing onto the deer*) suggesting high agency (probably due to difficulty in comprehending the involuntary, indirect nature of causality in this scene). But most narrators who treat the boy as topic and actor, use inchoative verbs of lessened agency, marking the boy's lack of volitionality: 'fall on' (*En, Sp, Ge, Tu*), 'slip on' (*En, Sp*), 'run into' (*En, Sp*), and English *hop on, land on*, and, most frequently, the neutral change-of-state verb, *get on*. Agency can also be adverbially decreased, e.g., *Und jetzt ist der Junge auf Versehen auf den Hörner raufgefallen*[10] 'And now the boy has accidentally fallen onto the horns' (*Ge*).

Mediopassive and equivalents. English-speakers have recourse to inchoative/middle *get* + participle constructions: *He got caught (on the deer's antlers)*. The equivalent Spanish construction is a reflexive mediopassive: *Se colgó de un ciervo* 'REFL hung from a deer'. The Turkish agentless passive performs the same function: *Boynuzlarına takılıyor* 'antlers+POSS+DAT attaches+PASS' [=(he) is attached to its antlers]. German narrators make use of no equivalent forms, but have recourse to other means of marking inchoativity. One option is to modify a stative view with 'suddenly': *Plötzlich ist er auf dem Kopf eines Hirsches* 'suddenly he is on the head of a deer'. This option is also used in Turkish, using the adverb *birden* 'suddenly', sometimes along with a verb form with the affixed auxiliary *ver* 'give', indicating something like speed, immediacy, unhindered change of state (Kononov, 1956:209): *Kendini birden kayalıktan geyiğin boynuzlarında bulu-verdi* 'self+ACC suddenly rock+ABL deer's antlers+LOC found-IMMED' [=suddenly he came to find himself off of the rock (and) on the deer's antlers].

Degree of agency: State view with boy as topic

Finally, the event can be construed as one in which the boy is simply located on the deer or its antlers, with no indication of how he came to be there. These construals thus attribute no degree of agency to either boy or deer, and have no indication of inchoativity. There are three semantic types in the data:

Active verb. In English and German simple active verbs of posture are used, e.g.: *He held onto a deer's horns. Da hält er den Hirsch fest* 'There he holds the deer tight'. The corresponding Spanish and Turkish forms are active reflexive verbs, where the reflexive functions as a kind of intensifier ('to take a firm hold of'): *Se agarró a unos cuernos de un ciervo* 'REFL hold to some horns of a deer'. *Bir dala tutunuyor* 'a branch+DAT holds+REFL'.

Past participle. This option is frequent in English and Spanish: *He was stuck there. Está colgado del ciervo* '(He) is hung from the deer' (also *apoyado* 'supported', *agarrado* 'held', *sujetado* 'stuck, fastened'). The corresponding Turkish construction is a locative with the past participle of *ol* 'be': *Çocuk da geyiğin kafasının üstünde olmuş oluyor* 'Boy TOP deer's head on+LOC be+PART is'. Comparable constructions are not found in the German data. An equivalent perspective is given by the verb *hängen* 'hang': *Da hängt der Junge* 'there hangs the boy'.

Locative. The most neutral State-View occurs in all four languages as versions of a simple locative, such as *The boy is on the deer*, in English.

The Head-in-Jar Scene

The remaining two scenes to be analyzed have a single animate participant, the dog. In this scene he puts his head into a jar, which remains stuck on his head. The dog is almost always chosen as topic and, since the jar is inanimate, there is no issue of locus of control. The major option is whether to take a Cause-View or a State-View. In Cause-Views, the dog as agent either puts his head in the jar, or, less frequently, puts the jar on his head. In State-Views, his head is simply in the jar. We will return to these options after considering an additional major option provided by English alone, of the four languages in this sample.

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[10] This utterance was produced by a 9-year-old.

In English, 36 percent of the narrators take a Become-View, using the inchoative/middle construction, *get* + participle. The varieties are:

The dog got stuck/caught.
He got his head stuck/caught (in the jar).
The dog got the jar stuck on his head.

This construction neatly solves the problem of describing a scene with the features: (1) enter state, (2) with unexpected consequences, (3) which endure. The inchoative/middle, along with the lexical semantics of *stuck* or *caught*, conveys the modal coloring of diminished agency and the aspectual coloring of enduring result.[11] Lacking these means, speakers in the other languages make use of negative potentials ('he couldn't get out') and aspectual verbs ('remain/stay').

Given these differing sets of options, descriptions of the Head-in-Jar scene present a different family of constructions than the scenes with two animate participants discussed above. Taking a Cause-View, we find many two-clause descriptions: an affirmative clause of entry followed by a negative clause of potential exit.[12] The following are representative examples:

English:
He sticks his head in there and then he can't get it out.

Spanish:
El perro se metió en la botella y no se la podía sacar.
'The dog put himself in the bottle and couldn't get it off.'

German:
Der Hund klettert in den[13] Glas, und hier kann der Hund
das nicht mehr rauskriegen.
'The dog climbs in the glass, and here the dog can't
get it out any more.'

Turkish:
Köpek de kavanozun içine kafasını soktu,
bir türlü çıkaramadı.
'The dog stuck his head in the jar,
couldn't get it out at all.'

Taking a State-View, narrators use locatives and participles. The English *stuck* seems to convey durativity in itself (e.g., *He had a jar stuck on his head*). In the other languages there are occasional uses of an aspectual verb:

[11] In an earlier study (Berman & Slobin, 1987; Berman, 1991) we also found some use of middle voice in Hebrew narrations, though less frequently than in English. As suggested below, the multi-purpose English verb, *get*, may facilitate acquisition of both inchoative/middle and passive voices in English.

[12] German-speakers take this option about twice as often as speakers in the other three languages. The following are percentages of narrators mentioning negative consequences: English—11%, Spanish—17%, German—26%, Turkish—12%. It is not clear whether these differences are attributable to differing linguistic resources, narrative style, or (most likely), both. In an earlier analysis, Berman and Slobin (1987:16) noted: "German speakers use more analytical devices for accumulating or adding on aspects of the event—entering and then not getting out, being inside and unable to get free, and adding locative directional detail. ... In German the activities of 'looking', 'smelling', 'sniffing' are regularly accompanied by statives of 'being' or 'having' with locative particles like *in, drin, auf* 'in, inside, on' and an additional comment on the dog remaining in that state or being unable to get out of that state."

[13] This gender error was produced by a 5-year-old.

Spanish:
Se le queda la cabeza atascada en la jarra.
'His head remains stuck in the jar.'

German:
Er bleibt mit seinem Hals im Glas stecken.
'He remains with his neck sticking in the glass.'

Turkish:
Kafası kavanozun içine sıkışıp kalmıştı.
'His head remained stuck in the jar.'

The Breaking Scene

This scene continues from the previous one. The dog, with the jar still stuck on his head, falls out of a window, breaking the jar. With the jar as topic, all four languages provide a Become-View, using differing syntactic means. At least half of the narrators in each group take this view (English—50%, Spanish—65%, German—100%, Turkish—80%). For encoding change of state, English and German provide intransitive verbs with inchoative/middle semantics; Spanish has a reflexive mediopassive; and Turkish has an agentless passive. For example:

English:
The jar breaks.

Spanish:
Se rompe el tarro.
'REFL breaks the jar'

German:
Das Glas zerbricht / geht kaputt.
'the glass breaks / goes kaputt'

Turkish:
Kavanoz kırılıyor.
jar breaks+PASS

Note that there are no passives in English for this scene. The *get*-passive is probably not appropriate, since there are no adverse consequences (indeed, breaking the glass liberates the dog to continue on his way). The *be*-passive is indistinguishable from a State-View (*the glass is/was broken*), and this is a dynamic scene. (The State-View is rare across all four languages.) The communicative demands posed by this scene, therefore, appear to exclude the English passive, though the passive is used with great frequency by English-speakers in the other three scenes (exceeding its use in Spanish, German, and Turkish).

English-speakers take a Cause-View on this scene more frequently than do speakers of the other three languages, especially at early ages. (German-speakers never do so, and only three Turkish adults present the dog as agent of a transitive verb.) It is not clear why this should be so, but one reason may lie in the lack of morphological marking to distinguish transitive and intransitive *break*, making the Cause- and Become-Views more similar to one another. In German, by contrast, the Become- and State-Views are close to each other in form (*geht/ist kaputt*), and only in German do we find a few narrators (ages 5 and 9) who take a State-View.

TYPOLOGICAL AND DEVELOPMENTAL CONSIDERATIONS

Passives and alternatives

Table 1 presents the "families of constructions" that have emerged in this small study of passives and alternatives, along with their first ages of appearance in narrating the four scenes of the frog story. The upper half of the table presents constructions that are traditionally examined in studies of voice and topicalization. The lower half presents additional means for encoding degrees of agency and inchoativity that appear in the data.

Table 1
Families of Constructions[a]

CONSTRUCTIONS	LANGUAGES			
	English	Spanish	German	Turkish
Full passive	P (4)[b]	A	A	(n.a.)
Object fronting	-	P (3)	-	P (5)
Agentless passive (En: *get*+PART, Tu: inflectional)	P (3)	-	-	P (3)
Reflexive mediopassive	(n.a.)	P (3)	-	(n.a.)
Inchoative/middle intransitive	P (3)	(n.a.)	P (3)[c]	(n.a.)
Lower agency in adjoining phrase or clause	P (3)	P (3)	P (3)	P (5)
Lower agency in lexical choice	P (4)	P (5)	P (5)	S
Lower agency adverbial marking	S	S	S	S
‘find-self’ inchoative	-	-	A	A
Enter jar - negative result	P (4)	P (4)	P (3)	P (5)
‘‘Quasi-instrumental’’ antlers	S	S	S	S

a. Entries in the table represent the first age at which a construction appears in the data. P = preschool (with age in parentheses); S = school age (9); A = adult; - = not attested; n.a. = not applicable.

b. Full passives with both *be* and *get* are present at age 4.

c. The only form at age 3 is *Ist kaputtgegangen*; *zerbricht/zerbrach* appears at age 9.

The four scenes from the frog story do a fair job of sampling basic event construal devices for each language. Ignoring age differences, the four languages represent different types with regard to the array of constructions covering the same set of semantic/discourse functions. English and German use full passives, while Spanish and Turkish use object fronting. Similar functions are performed by: English *get* + participle constructions, Turkish agentless passives, English and German inchoative/middle intransitives, and Spanish reflexive mediopassives. The ‘find-self’ inchoatives in German and Turkish perform functions similar to *get*+participle in English and reflexive in Spanish. Beyond these typological differences, speakers of all four languages have recourse to similar lexical and periphrastic means for manipulating the expression of degree of agency: selection of particular verbs and adverbs and more elaborate constructions (such as the "quasi-instrumental" references to antlers in the Deer Scene, and clauses of negative potential in the Head-in-Jar Scene).

Developmental patterns

If we look to the entries labelled "P" (preschool-age) in Table 1, we find the core of constructions that are available early on in each language. Setting aside German for the moment, the other three languages present consistent pictures. Preschoolers make use of the basic devices for topicalization and de-emphasis of agency that are provided by their language. Beyond this core, school-age children in all four languages use devices that show a more mature understanding of narrative discourse and plot structure, using adverbs and phrases indicating suddenness or involuntary action. Preschoolers show some ability to mark diminished agency by lexical verb choice and adjoined construtions.

English. The passive is the primary means of topicalizing non-agents, and it is an early acquisition in all of its forms. Inchoative *get*+participle constructions appear by age 3, and full *get*- and *be*-passives by age 4 in our data. Three- and four-year-olds also select verbs of diminished agency (*slip, hop, land*, etc.) in the Deer Scene and make reference to lower agency in the Chasing Scene by the use of adjoined phrases (*from the bees*) and clauses (*cause the bees were trying to get it*). One 4-year-old gave evidence that the morphology of the full *be*-passive is still being worked out at this age, saying: *The dog was be chasing by the bees*. The many functions of *get* in English, along with the paucity of topicalization devices, probably make the passive salient to English-speaking children.[14] It is striking that *get* occurs in a range of functions in preschool English. In its agentless form it serves as a kind of inchoative/resultative by age 3 (*got caught*), and in the full passive by 4. (Actually, by 3 in another scene in the frog story: *The dog's hiding so he doesn't get chased by that big deer*.) It is also an "all-purpose" verb for encoding changes of state for which the child may not have a specific lexical item, or to which s/he may wish to attributed diminished agency, e.g., *The dog gets into there*; *He got on a deer*; and even, *And then a deer gots him*. Such uses of *get* may help draw the child's attention to the prototypical agent defocusing function of the passive.

Budwig (1990) has shown that children by age 3;6—5 distinguish between *get*- and *be*-passives, tending to use full passives with *get* to express "speaker attitude about the consequences (usually negative) of the action described," and agentless passives with *be* "in talk about an agent who was generic, unknown, or irrelevant to the discourse." In naturalistic data, she found use of both *get*- and *be*-passives "to talk about actions without taking an agentive perspective." This perspective is clearly available to English-speaking children in our narrative data as well.

Spanish. The full passive is only used by one adult narrator, suggesting that it is a rare (and probably literary) form. However, left-dislocated OVS orders are readily used by the youngest narrators. Object-fronting also automatically occurs when a clitic pronoun encodes a continuing topic; compare *le ha cogido* 'CL.PRO has picked up' and *le ha cogido el ciervo* 'CL.PRO has picked up the deer', both meaning that the boy, as topic, has been picked up by the deer. This parallel probably facilitates the acquisition of object fronting with full NPs (e.g., *al perro le perseguan las avispas* 'OBJ+DEF dog CL.PRO chased the bees'). The reflexive serves a range of functions, and is a frequent and morphologically regular form. Its early mediopassive use in the Breaking Scene is not surprising, as this function is expressed by age 3 in all four languages.

German. The paucity of topicalizing and de-agentivizing devices in our data is surprising. Overall, we have found complex syntax to be mastered later in German; for example, relative clauses emerge much earlier in English and Spanish than in our German stories (Dasinger, 1990; Slobin,

[14] This claim may seem paradoxical in light of the ample literature that the passive is a late and difficult acquisition in English. This literature sees the passive as emerging in the last half of the fourth year, following the acquisition of many other constructions over the preceding two years or so. However, the discourse functions of the passive probably do not emerge until this age, and, in comparison with other languages, the English passive seems to be readily acquired to serve these functions.

1989). Unless this reflects an unknown difference in our sample or in the conditions of story elicitation, it seems plausible to suggest that German grammar poses particular acquisitional problems. The German case system, expressed on the article, is learned considerably later than nominal case inflectional systems in Slavic and Finno-Ugric languages and Turkish (Slobin, 1985). Word order variation in subordinate clauses is syntactically determined and serves no pragmatic functions, and object-fronting in simple sentences is only transparent if the object is masculine singular (otherwise nominative and accusative forms are identical). Word order is also sensitive to a verb-second rule, which moves the subject around the verb for no pragmatic purpose. (Compare: *Da lief der Hund* ‘there ran the dog’ with *Der Hund lief* ‘the dog ran’.) In addition to this array of formal problems, only accusative NPs can be promoted to subject in passives (excluding, for example, the equivalent of ‘I was given a book’ [Foley & Van Valin, 1985:309]). Accordingly, passives probably occur less frequently in the language modelled to children. What we find, then, is a far more "active-oriented" narrative strategy in the German children’s stories, stringing events one after another with less "syntactic packaging" than in the other languages.

Turkish. Our Turkish preschool sample is smaller than in the other languages, and we find object fronting at age 5, rather than at age 3 as in Spanish. Nevertheless, studies of spontaneous speech (Aksu-Koç & Slobin, 1985; Ekmekçi, 1986; Slobin & Talay, 1986) indicate mastery of pragmatic word-order variation well before age 3. In Ekmekçi’s study, a child of 1;11 placed new information in sentence initial position, using post-verbal and sentence-final positions to "provide background information which is already predictable from context or previous discourse" (p. 270). However, early control of pragmatic word order is shown in interactive *dialogue*, rather than monologic narrative, which is a later development. Early practice in dialogue undoubtedly prepares the child for the narrative uses of sentence position. However, on the basis of presently available data, there is no reason to assign ontogenetic priority to either English-style passives or Spanish- and Turkish-style left-dislocations in their narrative functions.

Agentless passives also occur by 2;0-2;6 in our samples of spontaneous speech from younger children. The earliest forms express two types of non-agentive perspective: (1) Resultant states of verbs of object destruction, as in the Breaking Scene, using past-tense forms (e.g., *kırıldı* ‘(it) broke+WITNESSED.PAST’, *yırtılmış* ‘(it) tore+NONWITNESSED.PAST’ [=must have gotten torn]). (2) Potential change of state, using present-tense (progressive and generic) forms (e.g., *takılmıyor* ‘(it) isn’t being attached’ [=it doesn’t stay on], *açılır* ‘it opens’ [=can be opened]). The use of these forms in a variety of tense/aspect, person, and affirmative/negative forms indicates that these types of non-agentive perspective are cognitively available to children before they are used in narrative.

Cognitive flexibility

In order to use families of constructions such as those reviewed here, children must have a degree of *cognitive flexibility* in taking various perspectives on events. Bowerman (1990) has examined the emergence of passives in English at about age 2, noting that several other construction types emerge at the same time. The collection of constructions indicates the child’s ability to attend to agent and change of state as separate components of an event, thus laying the groundwork for selection of event perspective. She notes:

> The emergence of passive constructions was not an isolated phenomenon in my data, but rather coincided with the emergence of a variety of related construction patterns. Taken together, these developments suggest the onset of a new cognitive flexibility in construing events as taking place spontaneously or as initiated by external agents or causes.

That is to say, 2-year-olds can already distinguish between Cause-Views and Become-Views. The following examples are indicative of this emerging flexibility:

Agent + change of state (Cause-View):
I can't get door open. (2;1)

Novel transitive (Cause-View):
I came this off [=made this come off]. (2;0)

Novel intransitive (Become-View):
Can I plant them? Will they plant? [dried beans] (2;0)

Spontaneous event (Become-View):
It's getting dry for me to play. [after a rainstorm] (2;1)

Such early cognitive flexibility in choice of construction type is similar to early word-order flexibility in Turkish, as discussed above. In both instances, the child has the support of interactive dialogue and non-linguistic context. Choice of event view in narrative, however, is more demanding, as indicated most clearly in children's attempted reformulations in telling the frog story.

Children's problems in finding an event perspective

Self-repairs in the narrative transcripts indicate that children often find difficulty in arriving at selection of perspectives on event construal dimensions. There are a few self-repairs at age 4, and many from ages 5 and 9. Such attempts show children at work on all four dimensions.

In the Chasing Scene, children hesitate in topic selection, as shown in the following examples. (Hyphen indicates short pause; three dots, longer pause. Age (years;months) and language are given in square brackets.)

He's- the bees are chasing the- dog. [4;11 *En*]

And- they- the dog is getting chased by the bees. [9;6 *En*]

Y al perro emm las avispas le- le iban a por él. 'And OBJ+DEF dog um the bees CL.PRO-CL.PRO went at for he.' [9;10 *Sp*] (The end result is an ungrammatical sequence of two prepositions, *a por*.)

Und der Hund- und die Bienen verfolgen jetzt den Hund. 'And the dog- and the bees chase now the dog.' [9;0 *Ge*]

In the Deer Scene, all four dimensions are at issue:

And- a moose ... the boy got caught on the moose's- antlers. [5;11 *En*] (Switch from moose [=deer] to boy as topic, and locus of effect, taking Cause-View with minimal agency.)

Then it turns out they're antler- a deer's antlers. So- and he gets- he lands on his head. [9;11 *En*] (Switch from Cause-View of *get*-passive to Become-View with verb of diminished agency.)

In the Jar Scene speakers hesitate in making a figure-ground choice: head-in-jar or jar-on-head:

Und der Hund der hat das Glas- der da der Kopf ist im Glas. 'And the dog he has the glass- the there the head is in the glass.' [5;3 *Ge*]

Pero como tiene el tarro en eh- come tiene la cabeza metida en el tarro, se rompe el tarro y no y no se rompe la cabeza. 'But since he has the jar on um- since he has the head placed in the jar, the jar breaks and not and not the head breaks.' [9;11 *Sp*]

Another perspective choice is between the dog placing himself or just his head into the jar. A Turkish preschooler shifted perspective from dog to head, beginning with an intransitive verb of motion and ending up with an accusative-marking on head, but no corresponding transitive verb:

> Köpek kavanoza girmiş. Kafasını yani. 'Dog+NOM jar+DAT entered. Head+POSS+ACC that:is.' [=the dog went into the jar—his head, that is] [4;3 *Tu*]

Spanish preschoolers sometimes have difficulty with the distinction between use of the reflexive for self-movement versus the simple transitive of the same verb for movement of a body-part as object, as shown in the following ungrammatical uses of the reflexive with body-part insertion:

> El perro se metió la cabeza en el bote. 'The dog put+REFL the head in the jar.' [3;11 *Sp*]

> Se mete el perro el morro. 'Puts+REFL the dog the snout.' [4;5 *Sp*]

The fact that many repairs occur in 9-year-old stories shows that narrative organization remains a problem long after the acquisition of basic narrative capacity and syntax. Berman (1991) has explored these issues at length in our Hebrew stories, finding very similar developmental patterns to those reviewed here. She notes increasing skill with age in perspective choice and event packaging, pointing to three interacting factors that contribute to the development of perspective taking:

> [T]he development of language use represents a complex interaction between: (i) increased efficiency at meeting the demands of on-line processing, which enables speakers to plan and organize their linguistic output hierarchically, in terms of higher-level thematic structures; (ii) conceptual maturation required for speakers to infer interrelations between events and to embed description of an event in a network of causal, temporal, and other associated circumstances in order to express more elaborately varied perspectives on a situation; and (iii) cumulative linguistic knowledge underlying speakers' ability to deploy the devices available in and favored by their language flexibly...

Mastering the typology of the native language

Berman's last point raises the issue of differences between languages in the families of constructions provided to speakers, with possible implications for typological differences in narrative organization. In previous studies of these data, dealing with tense/aspect, verbs of motion, conjunctions, and relative clauses we have found that preschool children adhere closely to the range of options provided by their particular language.[15] In an earlier paper I concluded (Slobin, 1987:443):

> Even a cursory examination of children's speech across languages suggests ... that 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. They do not tend to compensate by additional means where the language is relatively under-elaborated, nor simplify where the language is relatively elaborated; and they come to adapt the structure of connected discourse to the strengths and limitations of grammatical means for encoding event characteristics.

I suggest that the same conclusion applies to this examination of the acquisition of passives and their equivalents. Discourse problems posed by the four event construal dimensions are, no doubt, universal, but languages differ in the morphosyntactic and lexical solutions to these problems. At the same time that children are learning how to manipulate perspective and construct coherent and cohesive texts, they are becoming native speakers of a particular culture of discourse.

[15] See Berman (1988, 1991), Berman & Slobin (1987), Dasinger (1990), Slobin (1987, 1989, 1990), Slobin & Bocaz (1988).

Abbreviations

ACC	**accusative**	**OVS**	**object-verb-subject**
ABL	**ablative**	**PART**	**participle**
CL.PRO	**clitic pronoun**	**PASS**	**passive**
DAT	**dative**	**PL**	**plural**
DEF	**definite**	**POSS**	**possessive**
En	**English**	**REFL**	**reflexive**
Ge	**German**	**Sp**	**Spanish**
IMMED	**immediate**	**SVO**	**subject-verb-object**
LOC	**locative**	**TOP**	**topic**
OBJ	**object**	**Tu**	**Turkish**

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FACTORS OF LANGUAGE TYPOLOGY IN THE CROSSLINGUISTIC STUDY OF ACQUISITION[16]

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Abstract

In the course of language acquisition, the child becomes sensitive to sets of interacting grammatical constructions and lexical forms that characterize the TYPE of language that is being acquired. Therefore, one cannot make direct crosslinguistic comparisons with regard to the acquisition of particular forms, since any particular form is part of a system. This paper presents three small case studies of the role played by larger linguistic systems in the acquisition of individual forms and constructions in several languages, using elicited picture-story narratives gathered from children aged 3-9 and adults ("The Frog Story Project"). (1) An analysis of the development of forms meaning ‘and’ in English, German, Spanish, Hebrew, and Turkish demonstrates that one cannot rely on translation equivalents in comparing development of a grammatical element across languages. (2) An examination of the development of relative clauses in these langauges shows that the development of a construction must be considered with relation to a range of forms and functions within a given language. (3) A comparison of means of expression of states and processes in English and Spanish suggests that children come to systematically structure experiential domains in terms of typological characteristics of the ambient language, with differing results on the level of verbal expression.

All three case studies show that typological characteristics influence the structure of narrative, especially with regard to the management of information flow. At the same time, psychological factors of cognitive and communicative development are responsible for common patterns in the development of narrative ability in all five languages considered.

\...une langue constitue un système complexe de moyens d’expression, système où tout se tient...

[16] Paper presented to Symposium, "The Crosslinguistic Study of Child Language," Tenth Biennial Meetings of the International Society for the Study of Behavioral Development, Jyväskylä, Finland, July 9-13, 1989.

—Antoine Meillet (1906)

Crosslinguistic research makes it possible to tease apart the interacting factors that are at play in acquisition. By careful selection of languages, one can, for example, attempt to study the role of formal linguistic complexity in acquiring grammatical constructions within a given semantic domain; one can attempt to study the joint effects of semantic and pragmatic development on the acquisition of particular syntactic forms; and so on. We now know a good deal about the range of psychological factors that are involved in child language development. However, to a great extent, the psycholinguistic research literature is devoted to the study of individual linguistic forms (e.g., passives, pronouns) or sets of forms (e.g., questions, locative prepositions), rather than to consideration of **the language as a whole**. We study the child at work in solving this or that problem, while often ignoring the fact that, at the same time, each child is building up a given native language. By contrast, linguists of quite different theoretical persuasions have devoted a good deal of attention in recent years to such issues as **typology**, and **parameter setting**, with a concern to characterize individual languages as representatives of particular types of possible linguistic systems. These approaches are concerned with the interacting factors that make every language an organic entity.

The child, as well as the linguist, is involved in constructing a system. And we would do well to remember the formulation of language offered in 1906 by the great French linguist, Antoine Meillet: language is a system in which *tout se tient*—in which everything is connected (Meillet, 1982, p. 16). Accordingly, my goal in this paper is to focus on the acquisition of **a language**, rather than on acquisition mechanisms, or the comparative development of isolated parts of a grammar. I will suggest that the child becomes sensitive to sets of interacting grammatical constructions and lexical forms that characterize the **type** of language that is being acquired. To this end, I will present three small "case studies" of the role played by larger linguistic systems in the acquisition of individual forms and constructions in several languages. (1) First, an analysis of the development of forms meaning ‘and’ in English, German, Spanish, Hebrew, and Turkish will demonstrate that one cannot rely on translation equivalents in comparing development of a grammatical element across languages. (2) Second, an examination of the development of relative clauses in these languages will show that the development of a construction must be considered with relation to a range of forms and functions within a given language. (3) Finally, a comparison of means of expression of states and processes in English and Spanish will suggest that children come to systematically structure experiential domains in terms of typological characteristics of the ambient language.

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 3-9 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.[17]

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 all five countries, we studied adults and children of ages 3, 5, and 9; in addition, 4-year-olds were studied in English, Spanish, and Hebrew. There were 12 narrators in each group (with the exception of all Turkish groups, and English adults, with 10/group).

THREE CASE STUDIES OF LINGUISTIC TYPOLOGY

Crosslinguistic versions of ‘and’

The use of *and* to chain narrative clauses in English is so widespread and early to develop that it barely seems to deserve detailed attention. Our youngest narrator, at age 3;1, uses it for describing individual pictures, where its main function seems to be to chain together sequences of events. For example:

(1) **English — 3;1**
A owl. Flew out of here.
And he’s running away.

Peterson and McCabe (1987), in a recent study of the development of *and*, characterize it as "a simple linguistic device that signals cohesion, i.e. that a series of sentences are topically related" (p. 380). This function is evident not only in English, but also in translation equivalents of *and* in other languages of our sample:

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[17] 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). The data were gathered, analyzed, and discussed in collaboration with: Ayhan Aksu Koç (Boğaziçi Üniversitesi, Istanbul), Michael Bamberg (Clark University), Aura Bocaz (Universidad de Santiago, Chile), Lisa Dasinger (University of California, Berkeley), Esther Dromi (Tel Aviv University), Jane Edwards (University of California, Berkeley), Virginia Marchman (University of California, Berkeley), Yoni Ne’eman (Tel Aviv University), Tanya Renner (University of California, Berkeley), Eugenia Sebastián (Universidad Autónoma, Madrid), Christiane von Stutterheim (Universität Heidelberg), and Cecile Toupin (University of California, Berkeley). 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, Berkeley), the Max-Planck-Institut für Psycholinguistik (Nijmegen, The Netherlands), and the Institute of Human Development (University of California, Berkeley). Additional Spanish data were gathered in Chile and Argentina, from adults and children aged 3-11, by Aura Bocaz, with support from Grant H2643-8712 from Universidad de Chile. Reports of other aspects of the crosslinguistic study can be found in Aksu Koç (1988), Bamberg (1987, in press), Bamberg and Marchman (1989), Berman (1988, 1991), Berman and Slobin (1987), Renner (1988), Slobin (1987, 1988, 1990), Slobin and Bocaz (1988), and a forthcoming project volume edited by Berman and Slobin.

(2) **German — 3;3**
Da kommt ein Vogel.
Und da rennt er.
'There comes a bird. *And* there he runs.'

(3) **Spanish — 3;3**
Salió un pájaro inmenso,
y un niñito se cayó de cabeza as.
'An immense bird came out
and a little boy fell on his head like this.'

(4) **Hebrew — 3;6**
Hine yanšuf. *Ve* hine hayeled nafal.
'Here is an owl. *And* here the boy fell.'

Turkish, however, stands out as a language of a different type from these Indo-European and Semitic approaches to syntax. Although there **is** a translation and syntactic equivalent of *and* (*ve*), it never appears in stories told by 3- and 4-year-olds, and is only used three times by 5-year-olds. The earliest equivalent to the above examples is simple chaining, with no conjunction:

(5) **Turkish — 3;7**
Çocuk ağaca çıkmış.
Bu bunu aşağıdan itmiş.
'The boy climbed up a tree. This one threw this one down.'

In order to understand the absence of 'and' in early Turkish stories, it will be necessary to take a brief look at the syntax of connectivity. Although English, German, and Spanish come from a different language family than Hebrew, all four of these languages have basic subject-verb-object word order, and share typological characteristics of verb-medial languages. Of importance to our purposes, it is enough to note that such languages join clauses together with coordinating and subordinating conjunctions, with finite verbs in both clauses. Of these conjunctions, *and* is certainly the most primordial and prototypical: a simple "plus sign" between clauses, anticipating the flourishing of *but*'s, *before*'s, *because*'s, and the like.

By contrast, the basic word order of Turkish is subject-object-verb, and, like other verb-final languages, Turkish prefers to join clauses by adding a suffix to the verb of the first clause, creating special non-finite forms indicating temporal, causal, or logical relations to the following clause. (See Slobin, 1988, for details.) For example, the suffix -*ünce* on the stem of the first verb indicates that the event of the second verb follows immediately:

(6) Baykuşu gör-ünce düştü.
owl-ACCUSATIVE see-SUFFIX fell-3SG
'Upon seeing the owl, he fell.'

Such non-finite forms are simple in their own way: they have no marking for person/number or tense/aspect, and only indicate the relation between the two clauses. Three-year-olds already use suffixed non-finite forms that mark immediate sequence ('upon X-ing'), temporal overlap ('while/when'), and simple sequence ('and/and then'). In fact, the transparency and simplicity of such forms seem to make it especially easy for Turkish children to mark temporal relations between clauses in the preschool years.

Paradoxically, what makes Turkish 'and' difficult to acquire is that it is a "mature" form in comparison with the non-finite forms. It is widely used only in our adult narratives. Its function is to knit together several phases of what can be thought of as a single event, generally in conjunction with one or more non-finite forms. The following is a typical adult example:

(7) **Turkish — adult**
Bir baykuş da o kovuktan çıkarak çocuğu korkutuyor
ve ağaçtan düşüyor.
one owl PARTICLE that hole-from exit-SUFFIX boy-ACCUSATIVE scares
and tree-from falls
'An owl, coming out of that hole, scares the boy
and he falls from the tree.'

The suffix on the first verb functions to combine 'coming out' and 'scaring' into a conceptual unit, which is then joined by 'and' to its consequences, namely, 'falling'. Constructions like this require cognitive and processing capacities to "package" several aspects of a situation into a single narrative event. Although there are some childhood precursors, such elaboration is rare until late childhood and adulthood. Clearly, the Turkish word for 'and' is not a translation equivalent of English *and*, German *und*, Spanish *y*, or Hebrew *ve*, although the conjunction plays a similar syntactic role in all five of these languages. Turkish 'and' must be considered in relation to the entire system of devices for combining clauses. In a language like Turkish, this conjunction stands outside of a coherent set of non-finite clause-linking forms that are consistent with verb-final typology. (In fact, the Turkish word for 'and'—*ve*—was borrowed from Arabic, and was apparently added onto the set of native devices to perform specialized functions.) Even though it seems to be a transparent marker of conjunction from our point of view, Turkish children remain true to the typological characteristics of their language, and do not extend the use of *ve* to combine clauses in place of the non-finite forms. While our non-Turkish children must learn to supplement their versions of 'and' with more complex coordinating and subordinating conjunctions, Turkish children must learn to add *ve* to their repertoire when they are ready to construct more compact and coherent event representations. In sum, one cannot understand the course of acquisition of an individual form without attending to the entire system of contrasting forms of which it is a part.

Relative clauses

In considering the developmental history of words for 'and', the analysis rests on the entire set of clause-combining devices in a language. From this point of view, a conjunction which is syntactically similar across languages can lie at the center or periphery of the set in a particular language. 'And' is a prototypical, central member of the set in Indo-European and Semitic languages, but is highly non-prototypical in Turkic and other verb-final languages.

Within a group of typologically similar languages, such as English, German, and Spanish, one can study details of the acquisition of comparable forms in the presence of specific linguistic differences. Syntactically, relative clause formation is quite similar in the three languages, but the developmental patterns of relative clause use are rather different. Table 1 shows the percentage of narrators in each age group who use at least one relative clause.

TABLE 1

PERCENTAGE OF NARRATORS USING AT LEAST ONE RELATIVE CLAUSE

LANGUAGE	AGE				
	3	4	5	9	adult
Spanish	50%	50%	50%	100%	100%
English	17%	42%	25%	50%	100%
German	8%	-	17%	42%	75%

Throughout childhood, Spanish is in advance of English, and English is in advance of German; and even in the adult sample, only 75% of Germans use relative clauses in their stories. The basic form of the relative clause is accessible to children in all three languages, and diary studies show its use by age 3 or younger. Although we do not have other speech data from our narrators, it is unlikely that any of them has failed to acquire the construction as a grammatical form of the language. However, there are intersecting factors of linguistic complexity and narrative function which may account for the crosslinguistic differences in narrative use.

The languages differ in terms of the range of factors that must be considered in choice of relative pronoun.[18] Spanish has an all-purpose relativizer, *que* 'that', making no distinctions of number, gender, case, or animacy. English provides *who, that*, and *which*, allowing *that* to be used for both animates and inanimates; preschool children use both *who* and *that*. German is most complex, with a set of forms that mark number, gender, case, and animacy. Additionally, English and German have syntactically conditioned word-order changes in the subordinate clause (e.g., *the boy caught the frog / the frog that the boy caught; der Junge hat den Frosch gefangen / der Frosch, den der Junge gefangen hat* 'the:MASC.NOM boy has the:MASC.NOM frog caught' / 'the:MASC.NOM frog that:MASC.ACC boy caught has'). On grounds of linguistic complexity, then, we would expect German relative clause development to lag behind the other two languages, as it does.

However, linguistic complexity cannot account for the large developmental differences between Spanish and English. The following are the earliest relative clauses in our English and Spanish texts; they do not differ importantly in syntax:

(8) **Spanish — 3;6**
Esto es un tubo que está roto.
'This is a tube that is broken.'

(9) **English — 3;9**
I think he's the one who knocked all the bees down.

Crosslinguistic differences in functions of relative clauses also cannot account for the differences between Spanish and English. In fact, in all five languages of our sample, there is a parallel development in the **functions** of relative clauses, beginning with naming and identification of story participants, followed by more narrative-oriented functions that need not concern us here. (See Dasinger, 1990.) By and large, Spanish stands out in terms of early frequency of use, rather than precocity of function.

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[18] All three languages have an invariant locative relative (English *where*, Spanish *donde*, German *wo*). The following discussion pertains only to subject and object relatives.

The critical difference between Spanish and English development may be based on another kind of crosslinguistic dimension--a dimension not based on formal typology, but on typological differences in **patterns of use**—a "typology of use," if you will. Relative clauses in Spanish fit a general pattern of information flow in a language where modification tends to follow the noun:

(10) **noun—adjective:**
un tubo roto 'a broken tube'
noun—prepositional phrase:
un tubo de radio 'a tube of radio' (=a radio tube)
un tubo de España 'a tube from Spain'
noun—relative clause:
un tubo que está roto 'a tube that is broken'

In English, by contrast, in basic forms of modification—adjectives and noun compounds—modification precedes the noun, while prepositional phrases and relative clauses follow. The overall typological consistency of modification placement in Spanish may facilitate the processing of relative clauses, contributing to their greater frequency in both adult and child speech. This factor may lead Spanish speakers to use relative clauses more frequently for particular discourse functions than speakers of English and German. We have suggestive evidence from two functions of relative clauses: presentation of topics and narrative continuity.

Presentational Relative Clauses. Knud Lambrecht (1988), in a valuable pragmatic approach to relative clause use, discusses the "archetypal fairy-tale-starting construction." To give an example from the frog story:

(11) **English—5;1**
Once upon a time there was a little boy who had a frog and a dog.

Lambrecht notes that such constructions consist of a presentational clause with an existential verb, which locates a new referent in the discourse, followed by a relative clause which expresses a proposition about the topic referent. The youngest example of such a construction in our data comes from Spanish:

(12) **Spanish—3;7**
Esto es una rana que coge el perro.
'This is a frog that the dog catches.'

Dasinger (1990) has searched for all instances of the use of presentational relative clauses to locate new referents in our stories. Although they are relatively infrequent in the 3-5 age range, there are none in German, six in English, and nine in Spanish. This order of frequency is maintained for 9-year-olds and adults, with only a few instances in German. There seems to be a tendency in English and German to use constructions that are less tightly bound syntactically, such as:

(13) **English—9;6**
There was a boy, and he had a frog and a dog.

It is our preliminary impression that the order of information flow in Spanish favors relative clauses as a presentational device. Bates and Devescovi (1989) have presented suggestive related findings in Italian, which is typologically similar to Spanish. Reanalyzing a crosslinguistic picture-description task of MacWhinney and Bates (1978), they found that Italian speakers produced far more relative clauses than English speakers. As in our Spanish study, they found a strong effect as young as age 3, with relative clauses occurring in 52% of picture descriptions. For example, in describing a picture of a monkey eating a banana, the most common English response was, "A monkey is eating a banana," while the dominant Italian response was the equivalent of "There's a monkey that eats a banana" (*C'è una scimmia che mangia una banana*). Bates and Devescovi propose that the Italian relative clause marker, *che*, functions as a "topic-marker," predicating something definite about a new referent. That is, Italian speakers tend to use a very basic sort of presentational relative clause in picture descriptions. In our Spanish stories, we have found rudiments of presentational relative clauses used as simple picture descriptions, where the presentational frame is merely deictic (i.e., orienting to the picture):

(14) **Spanish — 5;1**
una rana que ha salido de un bote
'a frog that has gone out of a jar'

Although more data are needed, it may be that there is something in the "typology of use" of relative clauses that makes them more available for presentational purposes in Spanish.

Continuative Relative Clauses. Lambrecht discusses a related narrative function of relative clauses, which he calls the "continuative" (following Jespersen, 1924). Such relative clauses move the action forward, such as:

(15) **English—adult**
And then all the bees start chasing the dog, who runs away.

The only children in our sample who use relative clauses for this function are Spanish—two 5-year-olds and two 9-year-olds. It is interesting that in these instances the main clause introduces a new participant onto the scene, using a verb of "appearance" ('come out', 'appear'), followed by a definite action in the relative clause.[19] The following examples from Spanish are typical:

(16) **Spanish — 5;1**
Salió un loro que le tiró al niño.
'(There) came out an owl that threw the boy.'

(17) **Spanish — 9;3**
Del agujero sale un buho que hace que el niño se caiga.
'From the hole (there) comes out an owl who makes the boy fall.'

It may be that the accessibility of presentational relative clauses in Spanish facilitates the use of these "presentational-continuative" constructions, which anticipate mature use of continuative relative clauses such as (15), where the construction makes it possible to deal with action and reaction in a single syntactic unit, maintaining focus on a participant as patient in the main clause, who continues in focus as actor in the relative clause.[20]

Relative clauses can serve a continuative function in English and German as well, but with much less frequency. As noted, English- and German-speaking children use no continuation relatives at all. Table 2 shows that adult narrators use this form with greatest frequency in Spanish; less in English; and even less in German.

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[19] Note that such uses of relative clauses violate the commonly-held dictum in narrative analysis that a subordinate clause cannot present "foregrounded" information.

[20] Zorriqueta (1988) has studied relative clauses in Spanish children's narratives in the age range 2-10. She found a preponderance of relative clauses in postverbal position, where they serve functions of topic introduction and plot advancement, as in our frog stories. And she reports a similar developmental pattern: The majority of early instances are for topic introduction with presentative verbs, as in the following fairy-tale formula from a child of 2;4: *Haba una vez una niña que se llamaba Caperucita Roja* 'Once there was a little girl that was called Little Red Riding Hood' (p. 153). Plot-advancing relative clauses don't appear until about three years later, at age 5, though most of the examples cited are from older children. And, as in our data, most of the examples have verbs of presentation or appearance in the main clause, such as: *De repente vio unas mariposas que estaban hablando de sus colores de las alas* 'Suddenly (he) saw some butterflies that were talking about the color of their wings' (age 8) (p. 158).

TABLE 2 USE OF CONTINUATION RELATIVE CLAUSES BY ADULT NARRATORS	
LANGUAGE	Percentage of Narrators Using at Least One Continuation Relative
Spanish	75
English	50
German	25

In Turkish there are no continuation relatives at all, at any age, although relative clauses are used fairly frequently for other functions. Here we encounter another sort of intersection of linguistic typology and discourse organization. As part of the overall coherence of syntactic processing strategies, the relative clause precedes its head noun in verb-final languages. As a result, there is no way, using such a construction, to introduce a participant and then continue with the participant's subsequent action in a relative clause. The Turkish equivalent of (17) would convey a stange disordering of the flow of events. The preposed relative clause would present the owl's actions, followed by a report of the owl's appearance:

(18) Çocuğu düşüren bir baykuş delikten çıkıyor.
boy-ACCUSATIVE make-fall-REL.CL.SUFFIX one owl hole-from exits
'A boy-knocking-down owl comes out of the hole.'
(=An owl that knocks down the boy comes out of the hole.)

Here we have a major discourse factor that makes the development of relative clause functions in Turkish markedly different from the other languages under study. Prenominal relative clauses simply cannot fulfill certain narrative functions that are carried out by postnominal relative clauses in verb-medial languages.[21]

Looking across the languages of our sample we find that the frequency of use of relative clauses—in both childhood and adulthood—reflects typological preferences that are based on an interplay of processing factors and information flow in discourse.[22] In the third case study, it will be seen that typological characteristics on the level of the lexicon also influence the use of relative clauses.

Expressions of state and process in Spanish and English

Languages differ typologically not only in terms of syntax and morphology, but also with regard to what Leonard Talmy (1985) has called **lexicalization patterns**. Spanish and English present markedly different patterns of linguistic expressions of state and process, with Spanish orienting more to states, and English to processes. Our youngest child narrators show great sensitivity to the particular orientation of their native language. These differences are evident especially with regard to verbs of motion and descriptions of static configurations by means of relative clauses and participles. I will offer only a few examples here. (For a detailed discussion, see Slobin & Bocaz, 1988.)

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[21] For a comparative developmental analysis of relative clauses in Turkish and English, see Slobin (1986). Some of the functions of continuation relatives are carried out in Turkish by a non-finite, gerund form (*-erek*). As discussed in Slobin (1988) and Aksu Koç (1988), this form does not begin to be used until age 9, and is widely used only by adults. Like the continuation relative, use of this construction requires both the cognitive ability to package several aspects of a situation into a larger event, and the narrative ability to manage attention flow with relation to plot structure.

[22] In most respects, Hebrew seems to parallel Spanish, both in patterns of typology and acquisition, but the details of yet another language have been omitted for clarity of presentation. (See Dasinger, 1990.) Hebrew also parallels Spanish with regard to the lexicalization patterns presented below. (See Berman & Slobin, 1987; Slobin, 1987.)

Action and end-state. The two languages differ in terms of typical descriptions of actions that result in states. For example, where English speakers tend to say *The boy climbed the tree*, leaving the boy's end-state implicit, Spanish speakers often use a participial form of the verb, saying, *El niño está subido en el árbol* 'the boy is climbed-PARTICIPLE 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. These two examples come from 3-year-olds, and the use of participles expressing postures and locations is frequent in Spanish at all ages. English-speaking children, by contrast, indicate 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) **English, Spanish — age 4**
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.
Aqu está el niño colgado de un ciervo. 'Here is the boy, hung from a deer.'

Spanish-speaking 3-year-olds use other forms, in addition to participles, indicating that they are sensitive to their language's attention to events as 'completed but enduring as end-states'.[23] The most widespread form serving this function is the adverb *ya* 'already', indicating an attention to a process and its current consequences. For example:

(20) **Spanish — 3;2**
Están durmiendo. La rana *ya* salió.
'They are sleeping. The frog *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) **Spanish — 3;2**
El perro metió la cabeza en el frasco.
Se quedó el frasco ah.
'The dog 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) **Spanish — 3;8**
Los tiró al agua. Después *ya se terminó* de caer.
'(He) threw them to the water. Then they *already stopped* falling.'

Such examples—and they are highly frequent in our Spanish texts—support the suggestion that Spanish-speaking children are guided by typological characteristics of 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. The range of early Spanish forms—adverbs, verbs of 'remaining' and 'concluding'—indicate

[23] Examples (20), (21), (24), and (27) come from Chile, and (22) from Argentina. As discussed in Slobin and Bocaz (1988), the basic typological characteristics of Spanish are reflected in children's stories in both Spain and Latin America.

that children have not just acquired the participle as an isolated form, but have learned something about their language's **systematic** approach to the category of 'state'. By contrast, such marked forms are rare in the English stories, where action verbs predominate.

Verbs of motion and trajectories. With regard to states and processes, I have suggested that Spanish and English differ in what is asserted and what is implied. A similar difference between the two languages is reflected in verbs of motion. The English system of verb particles allows for elaborated depiction of a trajectory of motion. For example, in one scene in the story the boy is caught on a deer's antlers and the deer throws him off. The entire trajectory of the boy's course of motion can be described by particles attached to a single verb:

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

The trajectory is asserted by the verb complex, while the boy's final location in the water is implied. Such a compact depiction of trajectory is impossible in a language like Spanish, where there is a small set of verbs that incorporate directionality, such as *entrar* 'enter', *salir* 'exit', *subir* 'ascend', and a small set of prepositions that indicate only general direction, such as *a* and *en* 'movement toward a goal' and *de* 'movement away from a source'. At most, one can say the equivalent of 'he threw him to the water' or 'he fell to the water'. 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. With respect to the overall systematicity of the language, this is yet another pressure in Spanish for the use of relative clauses. 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. In essence, the "stage setting" is asserted, leaving the details of the trajectory to be inferred. In the following description, we know that the boy was located in the upper reaches of the tree and that he was thrown, but we must infer that he was thrown "down from out of the tree":

(24) **Spanish — 3;8**
Está subido en el árbol. Salió un buho y lo botó.
'(He) is climbed-PARTICIPLE in the tree. An owl came out and threw him.'

Spanish preschoolers sometimes use a curious form of relative clause—not noted in the other languages—which seems to function simply to establish that objects are located on the scene. For example:

(25) **Spanish — 4;10**
Una ardilla se sala del agujero que haba.
'A mole came out of the hole that there was.'

By school age the need to establish "stage setting" to support descriptions of motion comes to have a significant impact on the structure of narrative discourse. The following examples are typical of some of the older children. Note the italicized locative relative clauses.

(26) **Spanish — 9;2**
El ciervo le llevó hasta un sitio, *donde debajo haba un ro.*
Entonces el ciervo tiró al perro y al niño al ro.
Y después, cayeron.
'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.'

(27) **Spanish — 9;8**
El reno salió corriendo, con el perro a los pies. Cayeron juntos
a un precipicio, *donde cayeron juntos al agua*.
'The reindeer came out running, with the dog at his feet.
They both fell at a precipice, *where they both fell to the water*.'

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 as well—again indicating an overall systematic influence, both on the acquisition of particular forms and their deployment in discourse.

Conclusion

In conclusion, children are not acquiring grammatical forms and constructions "piecemeal," but are constructing a coherent system—a language in which *tout se tient*. Within the grammar, individual forms and constructions tend to reinforce one another, as in the use of non-finite clause-linking verbs in Turkish and postnominal modifiers in Spanish. Limitations in the lexicon can be balanced by elaboration of description, as in Spanish scene-setting; or lexical abundance, as in English verbs of motions, can allow static configurations to be left relatively unspecified. These are coherences within the language itself—coherences which shape the form of children's emerging grammars and lexical systems. There are also coherences between language and the purposes to which it is put, as when children acquire more specific clause-linking devices or more elaborate topic-comment structures to meet the needs of effective narration. The end result of acquisition is not a child who has mastered the syntax of relative clauses, but rather a child who can choose to use a relative clause of a particular type to fulfill a particular discourse function. That is, a child who has a full sense of the resources of the native language.

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