Introduction: Why Study Acquisition Crosslinguistically?

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> *Child language study can be more than the analysis of individual instances of language development, because it is possible to formulate laws of formation that are operative in every child language. This commonality is even international; therefore we will not need to limit our evidence solely to German children.*[1]
> —Clara and Wilhelm Stern, *Die Kindersprache* (1907)

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[1]"Und dennoch kann die Kindersprachkunde mehr als die Analyse individueller Sprachentwicklungen sein; denn sie vermag Bildungsgesetze zu formulieren, die in jeder Kindersprache wirksam sind. Diese Gemeinsamkeit ist sogar international; wir werden unsere Belege daher nicht ausschließlich auf deutsche Kinder zu beschränken brauchen."

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CROSSLINGUISTIC STUDY AS A METHOD IN
DEVELOPMENTAL PSYCHOLINGUISTICS

In 1907, when the Sterns published the first edition of their great diary study of German child language, they were able to point to a significant body of nineteenth century research on the acquisition of a number of European languages. They, and their contemporaries, were aware that there were clear crosslinguistic parallels in development, based on common principles of child psychology. The goals of investigators were directed beyond individual languages to the discovery of general principles. For example, the great Russian diarist, A. N. Gvozdev, publishing an article in 1928 under the title, "The significance of the study of child language for linguistics," noted that (1961, p. 9):

> The acquisition of the native language follows strict regularities and is characterized by the same features in different children. This supports the idea that native language acquisition is determined by general psychophysiological conditions which function uniformly in all people, thus leaving their mark on the strcture of language.[2]

The emphasis was on the universal, rather than the particular. The value of data from various languages was the same as that of data from various children: to demonstrate commonalities. And with the rise of an insular American psychology, "language development" became a summary of the facts of the acquisition of English, taken as representative of general patterns. Thus Dorothea McCarthy could summarize a large body of systematic observational studies and conclude, in 1950, that such studies:

> have yielded considerable uniformity of results, and a fairly accurate description can now be given of linguistic development in the age range of two to five years (p. 165).

It is the burden of the present collection of studies to demonstrate that crosslinguistic study does more than reveal uniformities of development, because properties of individual languages influence the course of development. Beginning with Melissa Bowerman's study of the acquisition of Finnish in 1965 (Bowerman, 1973), followed by a series of crosslinguistic studies organized by John Gumperz, Susan Ervin-Tripp, and Dan Slobin at Berkeley (Slobin, 1967), it has become clear that different types of languages pose different types of acquisition problems.[3] One cannot study universals without exploring particulars

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[2]"Usvoenie rodnogo jazyka po otnošeniju ko mnogim gruppam jazykovyx javlenij proxodit so strogoj zakonomernost'ju i xarakterizuetsja u raznyx odnimi i temi že čertami; i eto podtverždaet mysl' o tom, čto usvoenie rodnogo jazyka opredeljaetsja takimi obščimi psixo-fiziologičeskimi uslovijami, kotorye dejstvujut edinoobrazno u vsex ljudej i kotorye poetomu kladut svoj otpečatok i na strukturu jazyka."

[3]The following Berkeley dissertations on the acquisition of various native languages emerged

(Slobin, 1982). The world provides us with a marvelous set of "natural experiments," in which children with similar endowments master languages of varying forms. Gvozdev was right that psychophysiological commonalities "leave their mark on the structure of language," but that mark is on a more abstract level—the level of language universals. By combining attention to universals and particulars, we are beginning to discern a more differentiated picture of child language—one in which we can see why patterns of acquisition of specific properties VARY from language to language, while they are determined by common principles of a higher order. Such principles are summarized in my concluding chapter (Slobin, 1985). The task of this Introduction is to spell out the ways in which crosslinguistic study constitutes a METHOD for the discovery of general principles of acquisition.[4]

There are two major pacesetters to language development, involved with the poles of function and of form (Slobin, 1973): (1) on the functional level, development is paced by the growth of conceptual and communicative capacities, operating in conjunction with innate schemas of cognition; and (2) on the formal level, development is paced by the growth of perceptual and information-processing capacities, operating in conjunction with innate schemas of grammar. The course of acquisition of any particular linguistic form reflects an interaction of the child's abilities to decipher and cognize both structure and content. By examining the meanings of children's grammatical forms crosslinguistically, we can determine conceptual starting points for linguistic form; and by examining the forms of child grammar we can determine children's strategies for constructing morphosyntactic systems.

The crosslinguistic method can be used to reveal both developmental universals and language-specific developmental patterns in the interaction of form and content. Let us first examine evidence for the NULL HYPOTHESIS that language development is everywhere the same, and then turn to HYPOTHESES OF SPECIFIC LANGUAGE EFFECTS upon the course of development.

NULL HYPOTHESIS: DEVELOPMENTAL UNIVERSALS

The null hypothesis, as discussed earler, guided early work in child language development, and it still provides an important part of the picture. Wherever we

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from *A field manual for cross-cultural study of the acquisition of communicative competence* (Slobin, 1967): Arabic (Badry, 1983), Black English (Mitchell-Kernan, 1969), Finnish (Argoff, 1976), Hungarian (MacWhinney, 1973), Japanese (Clancy, 1980), Luo (Blount, 1969), Mandarin (Erbaugh, 1982), Samoan (Kernan, 1969) Serbo-Croatian (Radulovic, 1975), Spanish (Eisenberg, 1982), Turkish (Aksu, 1978), Tzeltal (Stross, 1969).

[4]In this chapter, various pieces of data from the volume are presented as examples of the use of the crosslinguistic method. Many of the same facts are also discussed in my final chapter, "Crosslinguistic evidence for the Language-Making Capacity," where they are used to support the formulation of general "operating principles" for acquisition. (See volume 2.)

find similar patterns of development crosslinguistically, in function or in form, we see evidence for strong developmental universals which may operate across all settings. On the functional level, there is evidence for the primacy of conceptual development in providing the first meanings for grammatical forms and in pacing the course of development of certain forms. And on the formal level, there is evidence for general language acquisition strategies that take precedence over the constraints of particular linguistic forms in individual languages.

Conceptual Development and the Construction of Grammar

The acquisition studies of numerous languages reported in this volume reveal conceptual underpinnings of child grammar that could not be determined by study of any one language in isolation. This is because the crosslinguistic method allows us to track the course of acquisition of particular semantic notions across a range of differing surface expressions. Children acquire word-order patterns and morphological markers, such as case inflections, adpositions, and verbal inflections, before they master the full range of uses of these grammatical devices in the adult language. Across languages, common meanings are assigned to diverse forms. The point can be made by examining the following four propositions about the ways in which children use grammatical marking to express linguistically relevant notions.

1. *Conceptual Development Provides Starting Points for Grammatical Marking.*

One of the clearest examples of this proposition is offered by comparison of the notions expressed by children in their early marking of transitivity. In child speech in various languages early grammatical marking of agent-patient relations (accusative or ergative inflections, word-order patterns) focuses on basic causal events in which an agent carries out a physical and perceptible change of state in a patient by means of direct body contact or with an instrument under the agent's control (Slobin, 1981). Crosslinguistic comparison shows a striking UNDER-extension of both accusative and ergative inflections to such "highly transitive" (Hopper & Thompson, 1980) events. For example, Gvozdev (1949) noted that in his son's acquisition of Russian, the accusative inflection was apparently first limited to the direct objects of verbs involving manipulative physical action on things—such as 'give', 'carry', 'put', and 'throw', while uninflected nouns served as objects of verbs like 'see' and 'read'. Investigating the acquisition of Kaluli, an ergative language of New Guinea, Schieffelin (1985) found that the ergative inflection first appears only on the subjects of verbs such as 'give', 'grab', 'take', and 'hit', and that it tends to be omitted in sentences with verbs such as 'say', 'call-out', and 'see'. She has found in addition, that the ergative is used earlier, and with greater consistency, in utterances with past-tense verbs, as opposed to present or future; and that negated verbs tend to be accompanied by

grammatically unmarked agents. In all of these instances an event has to be overtly manipulative and actually realized in order to receive ergative marking. Furthermore, in two quite different ergative languages, Kaluli and Quiche (Pye, 1979), children do not extend ergative markers to intransitive constructions, indicating that they are specifically grammaticizing only agents of highly transitive, manipulative activities. These examples suggest that such activities constitute a central semantic organizing point for grammatical marking—a starting point with a particular salient conceptual basis from the point of view of child development. Crosslinguistic study is necessary to discover and define such conceptual bases of grammatical marking.

2. Preferred Event Perspectives Provide Starting Points for Grammatical Marking.

We have noted that children focus on events that have been realized and actually completed. Taking a perspective on immediate results has consequences for the meanings underlying the first uses of forms used for marking tense, aspect, and voice crosslinguistically. For example, the first uses of past-tense, perfect, or perfective verb inflections seem to comment on an immediately completed event that results in a visible change of state or location of some object, with later development into a more general past tense. The past tense or perfect appears first on verbs like 'fall', 'drop', 'break', and 'spill' across a very wide range of languages and language types.

Focus on results often precludes or excludes focus on agency. There are examples in child speech in which a past-tense form is reinterpreted as a description of an affected object, such as attempts by Italian children to make the past participle of transitive verbs agree in number and gender with the direct object, though the participle does not agree with the object in the input language (Antinucci & Miller, 1976). In Hebrew (Berman, 1985), children appear to simplify the system of verb patterns into an opposition between a middle-voice ''result'' perspective and a transitive ''agentive perspective.'' And in Turkish (Savasir & Gee, 1982) the first passive verb forms are used in situations in which a child, having failed to bring about a desired result, focuses on the object of manipulation with a negative, third-person passive. For example, a child tries to open a door, fails, and says the equivalent of 'it isn't being opened', thereby shifting attention from her own action to the resisting object. In instances such as these, children narrow the meaning of a particular grammatical marking—a verb participle, a derivational verb pattern, a passive marker—to express a conceptually salient perspective on events of a particular type.

3. Universal Conceptual Schemas can Override Input Language Patterns.

The aforementioned examples deal with children's narrowing of the semantic content of a grammatical category in the first phases of its acquisition, apparently making distinctions that are not grammatically marked in the input language. In

other instances, children's definitions of grammatical categories may be too broad, in that they ignore or neutralize distinctions that are grammatically marked by mature speakers. The resulting mapping of form and content reflects basic conceptual organization which may well be universal. For example, early uses of grammatical markers of location, movement, and possession (case inflections, pre- and postpositions) focus simply on the relation of a figure to a ground, whether or not the figure is static or moving with respect to the ground, and whether or not the ground is a physical location or an animate being (possessor or recipient of the figure). For example, in languages which provide distinct case inflections for locative STATE (e.g., 'in', 'on') and locative GOAL ('into', 'onto'), a typical child error consists in confusion of the two forms, generally with the stative form used for both functions. Such errors are found in German (Mills, 1985) in regard to dative (static) and accusative (directional) casemarking on articles; in Slavic languages (Gvozdev, 1949; Radulovic, 1975; Smoczyńska, 1985) in regard to nominal suffixes of the accusative and other cases; and in Turkish (Aksu-Koç & Slobin, 1985) in regard to the locative and dative-directional suffixes on nouns and deictics. These patterns suggest a conceptual schema oriented simply to the figure-ground relation, with later development of

TABLE I.1
Order of Acquisition of Locative Expressions in Four Languages
and Percentage of Subjects Producing Each[a]

Scale Point	English		Italian		Serbo-Croatian		Turkish	
1	IN	90	IN	91	ON	88	IN	90
2	ON	83	ON	88	IN	84	ON	80
3	UNDER	81	UNDER	84	BESIDE	82	UNDER	79
4	BESIDE	74	BESIDE	77	UNDER	72	BESIDE	79
5	BETWEEN	49	BETWEEN	57	BACK$_f$	31	BACK$_f$	71
6	FRONT$_f$	30	BACK$_f$	42	BETWEEN	26	FRONT$_f$	53
7	BACK$_f$	21	FRONT$_f$	41	FRONT$_f$	19	BETWEEN	50
8	BACK	14	BACK	23	BACK	16	BACK	7
9	FRONT	3	FRONT	18	FRONT	12	FRONT	4
Gutman coefficient of reproducibility	0.93		0.89		0.86		0.91	
Number of subjects	86		74		90		70	

[a]Data come from an elicitation task carried out with subjects between the ages of 2;0 and 4;8. The subscript f on BACK and FRONT denotes location with regard to reference objects that have an inherent front-back orientation (e.g., cars, houses), while BACK and FRONT without the subscript denote non-oriented reference objects (e.g., plates, blocks). This table appears as Table 5 in Johnston and Slobin (1979, p. 537).

orientation to the means in which the relationship is temporally manifested (enduring versus coming-into-being).

In addition, we find that children are not particularly concerned to indicate grammatically whether the locative reference point is animate or inanimate. For example, in languages like Hungarian (MacWhinney, 1985), which distinguish an allative (directed movement) from a dative (beneficiary) case, children often use the dative for both meanings. Bowerman (1981) gives related examples from English, where the data consist of confusion of forms that mark a distinction that is not marked in some other languages: English-speaking children confuse *give* and *put,* as in languages that do not distinguish animate from inanimate goals, saying things like ''put one to me'' and ''give some in here.''

Similar inattention to animacy as a locative feature is seen in expressions of location and possession. Broadly conceived, possession is a locative state in which an object is located in relation to a person in an enduring or socially-sanctioned manner. In languages in which location and possession are marked by distinct means, we sometimes find that children use a single means of expression for both notions, as in German children's use of the locative preposition *zu* 'to' to indicate possession as well (Mills, 1985). Such examples indicate that a basic conceptual schema can override distinctions that are grammatically marked in the input language. In the instances noted above, a schema of object location is recruited to grammatical use of case inflections, adpositions, or verbs, overriding distinctions of static location versus direction, or distinctions of animate versus inanimate reference points for object location or object transfer.

4. *Conceptual Development Determines Order of Emergence of Grammatical Forms.*

Within a domain of form-function mapping, we typically find orders of emergence based on conceptual development. For example, when children begin to acquire locative expressions (pre- or postpositions, locative case inflections), they do not acquire the means for expressing all locative relations at once; rather, there is a common order of development across languages. Johnston and Slobin (1979) found similar sequences of development in English, Italian, Serbo-Croatian, and Turkish, as shown in Table I.1. The means of expression are different across these languages, involving prepositions (English, Italian), prepositions and case inflections (Serbo-Croatian), and postpositions and case inflections (Turkish). The absolute ages of acquisition of the various terms also differ between these languages. However, the common order of development of major conceptual categories is determined by children's ability to conceptualize spatial relations, moving from simple topological relations to more complex projective relations (Parisi & Antinucci, 1970). (Differences in order of development in the middle section of the table are due to language-specific effects, as discussed below. Tables such as these reveal both common orders of development on conceptual grounds and the influence of factors of linguistic complexity on

particular points in the sequence.) Similarly, in regard to other conceptually-paced domains, various investigators have found common crosslinguistic orders of development of question words and connectives based on the meanings of these terms (e.g. Bloom et al., 1980; Clancy et al., 1976).

Data such as these support the claim "that there is a fairly atuonomous development of intentions to express various semantic notions" (Slobin, 1973, p. 183). In addition, on the level of linguistic STRUCTURE, the null hypothesis predicts instances in which general language acquisition strategies override FORMAL characteristics of the input language.

Formal Pattern Preferences and Grammar

Along with universal preferences for the semantic content of grammatical markers in early child speech, crosslinguistic study also reveals preferences for the placement of such markers and for the construction of morphological paradigms and word-order patterns of particular types. Some formal pattern preferences are tied to the underlying meanings of grammatical expressions, while others seem to be relatively content-free.

1. Concepts are Combined in Grammatical Morphemes According to Semantic Affinities

We have noted that children make use of a particular set of concepts as the semantic bases for early grammatical marking crosslinguistically. We can now make an additional observation about basic semantic categories—namely: they exist in a sort of SIMILARITY SPACE in which categories are arrayed according to certain NATURAL AFFINITIES of varying degree. We can begin to map out this similarity space by examining the acquisition of grammatical forms for which two or more semantic notions combine or interact in determining the choice of form. As an example, let us examine the ways in which verb forms can be conditioned by various semantic distinctions. In the Slavic languages, the verb has different forms for perfective and imperfective aspect. For example, in Polish one uses the verb *otworzyć* 'open' to refer to a single, completed act of opening, and the verb *otwierać* to refer to ongoing or repeated acts of opening. Children acquiring such languages have no difficulty in learning pairs of perfective and imperfective verbs, and even create their own neologisms for new perfective or imperfective forms before age 3 (Gvozdev, 1949; Smoczyńska, 1985). Notions of verbal aspect are not only highly accessible to the child, but they are also so close to the meaning of the verb itself that children quickly learn to combine verb meaning and verb aspect in a single form, easily learning separate forms for separate aspects. However, other notions are not so easily combinable with verb meaning. Wherever we encounter verbs which change

their form on the basis of present versus past tense, or affirmative versus negative, or distinctions of person, we find that children prefer to use a single form of the verb for all tenses, or for both affirmative and negative, or for all persons. Tense, negation, and person are apparently not inherently part of verb meaning for children, as we find in early errors in Japanese, Slavic, and Romance languages. In Spanish (Clark, 1985), for example, children will use a single verb stem for all persons or tenses, even if the input language provides systematic stem variations for particular verbs. In Japanese (Clancy, 1985), where the form of negation is different for past and non-past tense verbs, we find children using a single negative form regardless of tense. Apparently children operate with built-in preferences for the combinability of notions in morphemes. In these examples—which could not be determined by the study of any individual language alone—it seems that children recognize that person does not change the meaning of the verb in the way that aspect does, and that notions like tense and negation affect the meaining of the entire clause, and not just the meaning of the verb.

2. Grammatical Morphemes are Positioned According to their Scope of Operation

These examples move us from the morphological to the syntactic level of early child grammar. Children are sensitive to the SCOPE or RANGE of operation of grammatical elements. For example, they seem to recognize that if an element operates on the meaning of the clause, it should, ideally, be placed outside of the clause, and should not alter the internal form of the clause. Negation provides a prime example of this principle. Wherever possible, children will move negative elements, leaving verb forms and word order intact. For example, in Turkish (Aksu-Koç & Slobin, 1985) and Japanese (Clancy, 1985), where negative particles are sometimes placed inside the verb, children tend to move these particles to the end of the clause, following the standard verb-final order of these languages. Similar examples could be offered from other languages in regard to the placement of negation as well as other forms that operate on clauses as a whole, such as markers of questions and conditional forms. For example, in both Polish (Smoczyńska, 1985) and Hungarian (MacWhinney, 1985) a conditional marker is placed immediately after the verb stem, preceding person-marking. However, children tend to reverse the order, marking person close to the verb stem and placing the conditional marker after markers of person and tense. All of these examples reflect a general language acquisition strategy to extrapose operators whose scope is the clause:

> *Japanese:*
> *VERB+PAST+NEGATIVE
> (=VERB+NEGATIVE+PAST)

Turkish:
        *VERB+TENSE+PERSON NEGATIVE
        (=VERB+NEGATIVE+TENSE+PERSON)

Polish:
        *VERB+PERSON+CONDITIONAL
        (=VERB+CONDITIONAL+PERSON)

Hungarian:
        *VERB+PERSON CONDITIONAL
        (=VERB+CONDITIONAL+PERSON)

Again, invididual instances of such phenomena could be interpreted in terms of language-specific features, while the crosslinguistic commonality of such patterns, across differing morphosyntactic forms, suggests general formal pattern principles.

3. Grammatical Markers are Placed According to Principles of Semantic Relevance

The examples we have just considered also suggest another type of syntactic principle in regard to the placement of inflectional morphemes in relation to the words that they operate on. In these examples we note preferences to keep grammatical markers of aspect, tense, and person close to the verb, while keeping negation and conditionality peripheral. More generally, we can speak of the degree of "relevance" (Bybee, 1985) of the meaning of a grammatical marker to the meaning of the stem to which it is affixed. In Polish, for example, person-marking is attached to conditional particles and conditional connectives, but children avoid applying a verbal suffix to such non-verbal elements as conditionals and connectives, preferring to mark person and number on the verb. In Hungarian, the verb receives a suffix indicating the definiteness of the direct object, and children have great difficulty in acquiring this form. On the other hand, where definiteness is indicated by a marker on the nounphrase as in English and German definite and indefinite articles, or Bulgarian (Gheorgov, 1908) noun suffixes for definiteness, children have little difficulty in learning to mark these notions grammatically. Apparently the noun is a more "relevant" locus of definiteness than is the verb.

    Findings such as these suggest that children follow a general principle, across an array of language-specific instances: Morphemes that go together semantically should be placed together syntactically. To briefly summarize, many of the crosslinguistic child language patterns we have examined suggest that children operate with a hierarchy of relevance of grammatical markers in relation to the part-of-speech they modify. For example, tense and person are more inherently part of the meaning of a verb than are negation and conditionality, which operate on the meaning of an entire clause. Accordingly, it is easier for children

to learn to affix tense and person markers to the verb than to affix negation and conditional markers to the verb, and it is difficult for them to learn to affix verbal notions like tense and person to non-verbal elements. A hierarchy of relevance also affects the ease with which children can acquire stem changes of the verb. Whereas children can easily acquire stem changes for perfective and imperfective aspect, they find it difficult to vary the form of the verb for person or tense. This whole array of data suggests a hierarchy of relevance of semantic notions in relation to the verb, with aspect closest to the inherent meaning of the verb, tense and person more distant, and negation and modalities such as the conditional the most distant. Particular languages present pieces of this pattern; comparison across languages reveals the more general pattern.

4. Morphological Systems are Constructed According to Formal (Non-semantic) Criteria

Examples such as those summarized earlier show that children are engaged in mapping particular types of semantic categories onto lexical items and grammatical forms in specific and limited ways. Such examples show subtle interactions of semantic and non-semantic criteria in the construction of grammar. It is also evident, however, that many systematic aspects of early child grammar have no semantic bases at all. Children are equipped with capacities to construct morphological paradigms and syntactic rules. To use Annette Karmiloff-Smith's (1979) felicitous phrase, they approach language as a formal ''problem-space'' in its own right, in addition to the acquisition of a tool for communication and thought. Our crosslinguistic data show many attempts to work on the structures of language per se.

For example, it is evident that children work at constructing morphological paradigms—that is, principles for the systematic alteration of forms of particular morphemes. Much of the classical child language literature deals with children's attempts to regularize inflectional systems, reflecting universal patterns of systematicity, such as the familiar overregularization of the English past tense. Such examples show a preference for uniform marking of a grammatical category in all instances. There are also preferences to build PARADIGMS on the basis of systematic distinctions. For example, Spanish-speaking children (Clark, 1985) have little trouble in realizing that nouns are divided into two classes on the basis of their endings, although these endings generally have no semantic basis. They make use of this division in matching the forms of associated articles and nouns. In Spanish, nouns that take the indefinite article *un* and the definite article *el* generally end in *-o,* and nouns that take the articles *una* and *la* generally end in *-a.* Children adjust inconsistencies in the input language, saying things like **un papelo* instead of *un papel* and **la flora* instead of *la flor.* In this way they show their grasp of a purely formal characteristic of their language—namely, a binary division of nouns for grammatical purposes. Crosslinguistic comparison suggests

that binary divisions may be high on a built-in hierarchy of formal criteria for choice of grammatical morphemes. For example, nouns in Hebrew (Berman, 1985) are pluralized by the addition of *-im* to masculine nouns and *-ot* to feminine nouns. At first, children use the single form *-im* to pluralize all nouns, indicating that the semantic notion of 'plural' is basic, taking precedence over formal, nonsemantic variation. However, at the next stage of development, Israeli children divide their nouns into two classes on an idiosyncratic basis. In the adult language, words that end in stressed *-a* and unstressed *-et* and *-at* generally take the feminine plural. Little children, however, arrive at a simpler binary split, adding the feminine *-ot* to all nouns that end in *-a,* whether or not the final vowel is stressed, retaining the masculine *-im* for all other nouns. This results in many errors in regard to the adult system, which has more complex means of distinguishing masculine and feminine nouns. But the children's solution shows a basic ability to deal with a formal basis for suffixing if it is based on a highly salient and binary division of words on a single criterion, such as the final sound of the word.

Sometimes children's regularizations even reflect patterns that are not modeled in the input language, suggesting quite general preferences. For example, Bowerman (1974) and others have noted tendencies to use the sentence frame alone to define the valence of the verb, without special lexical or inflectional marking of transitivity or causativity, as in familiar English examples such as "Kendall fall that toy" (= 'drop') and "I come it closer" (= 'bring/make come'). There are examples in the child language literature of such constructions in English, French, Portuguese, Polish, Hebrew, Hungarian, and Turkish. What is striking is the fact that children attempt such forms even in those languages in which the input does not model this possibility. As another example, consider children's preferences for analytic over synthetic expressions. Where the input language provides both options, the analytic forms are used early on, such as the French possessive *de moi* in place of the synthetic *mon/ma/mes*. Note that the child's option allows for separate expression of possession, person, and number, reflecting a general tendency towards one-to-one mapping. In instances where the language provides synthetic forms, children often invent their own analytic equivalents, such as the early use in Hebrew of a separate PREPOSITION + PRONOUN construction in place of adult fused forms (e.g. *al* + *ani* 'on + I' instead of *alay* 'on:me').

In sum, the acquisition literature is full of examples of children's attempts to simplify or restructure the input language along universal lines of child grammar formation, supporting the null hypothesis that language acquisition is everywhere the same, regardless of particularities of individual languages. However, language acquisition takes place in a web of universals and particulars, and much recent crosslinguistic work seeks to evaluate hypotheses of the effects of features of particular languages on the course of acquisition. While the longterm goal remains one of discovering general processes, the course of language acquisition is not everywhere the same in its details.

HYPOTHESES OF SPECIFIC LANGUAGE EFFECTS

1. Form-function Interaction Influences Rate or Sequence of Development

We have already noted that conceptual development plays a key role in providing starting points and developmental sequences of the meanings of grammatical forms. However, factors of accessibility of linguistic forms to the child also play a role in individual cases.

Locative Development. Although the overall sequence of development of locative adpositions follows the scheme presented by Johnston and Slobin (1979) and others, relative linguistic difficulty can cause minor changes in developmental sequence. Consider Table I.1 once again. Earlier, we noted that the middle section of the table reflected crosslinguistic differences in the order of development of pre- or postpositions expressing the notions 'between' and 'front/back' with featured objects. The expected order of development on grounds of conceptual complexity is 'back' < 'front' < 'between' (Johnston & Slobin, 1979). This order matches the sequence of linguistic development in Turkish, where the terms do not differ in linguistic complexity: each locative expression is a single semantically transparent postposition. The English and Italian terms for 'back' and 'front' are sufficiently complex linguistically to retard the emergence of these terms in relation to terms for 'between', even though 'between' is a conceptually more advanced notion. In English we have two terms for 'back' rather than one, with the further complexity that one of the options is morphologically complex: *behind* and *in back of*. The Italian expression, *dietro a,* is also morphologically complex, and does not correspond to the word for the body part 'back'. Apparently formal factors such as these can exert a degree of influence on aspects of the emergence of linguistic forms. Johnston and Slobin conclude (1979, p. 541): "Wherever conceptual complexity fails to predict actual order of acquisition, we find some pocket of relative LINGUISTIC difficulty." Crosslinguistic comparisons of this sort help to define the sorts of linguistic difficulty that can interact with conceptual factors in pacing acquisition.

Tense/Aspect. Although past-tense marking of non-punctual events is generally later than marking of punctual events, both types of past tense seem to be early in Slavic languages. For example, in Polish, where there is a clear morphological distinction between perfective and imperfective verb forms, there is evidence that very young children use past imperfectives to refer to anterior non-punctual events, while using past perfectives to refer to completed punctual events (Smoczyńska, 1985; Weist et al., 1985). Here the presence of a clear linguistic distinction may accelerate children's ability to mark a tense/aspect contrast.

Pragmatic Functions.   In languages which provide clear grammatical marking of pragmatic functions it is possible to find evidence for children's early attention to functions that may not be clearly discernible in the development of other languages; and it is even possible that the existence of such marking draws children's attention to the relevant functions. For example, Clancy (1985) reports very early aquisition of perceptually salient, sentence-final particles in Japanese—appropriately used to express pragmatic functions not as clearly evident in other sorts of languages:

> *Yo* is used when the child is encountering resistance or lack of mutuality, and feels
> he can impose his information or will on the addressee; *ne* is used when the child is
> in rapport with the addressee, agreeing with him or expecting his confirmation or
> approval. The emotional content of *no* is less fixed than *yo* and *ne;* typically *no*
> seems to be fairly neutral in affect, occurring in the ordinary give and take of
> information shared in the speech context.

2. Particular Linguistic Forms are Relatively More Accessible, Holding Content Constant

About a decade ago (Slobin, 1973) I noted that postpositions and suffixes tend to be acquired earlier than prepositions and prefixes for the expression of particular locative notions and grammatical cases, suggesting that children pay special attention to the ends of words. Such comparisons can only be carried out crosslinguistically, since one must try to hold meaning and frequency of use constant. Thus, for example, the emergence of the first morphological marking of simple locatives like 'in' and 'on' is earlier in postpositional and inflectional languages like Hungarian and Turkish than in prepositional languages like English and Serbo-Croatian. Peters (1985) reports additional data on the salience of postposed over preposed grammatical markers. To cite another type of example, it appears that case inflections are acquired earlier than word-order regularities for the expression of comparable semantic relations such as agent-patient (Ammon & Slobin, 1979; Slobin, 1973, 1982; Slobin & Bever, 1982). Ammon and Slobin suggest that it is easier for children to attend to "local cues" on individual words than to process and store patterned configurations of words in clauses. Crosslinguistic comparison thus reveals general language acquisition strategies which have different effects on the course of acquisition of particular languages.

3. Separate Marking of Notions in Particular Languages Reveals a Conceptual Substratum

The early acquisition of pragmatic particles in Japanese reveals children's ability to attend to the relevant underlying distinctions. Similar evidence is provided wherever a particular language divides up a conceptual area in more detail than

others. For example, Japanese has several distinct negative markers, and children show only certain types of confusions in acquiring these markers (Clancy, 1985). The directions of confusion reveal an underlying conceptual substratum which could not readily be seen in a language with less elaborate negative marking. The arrows in the following chart represent the directions of children's overextensions of the meaning of one form to include that of another:
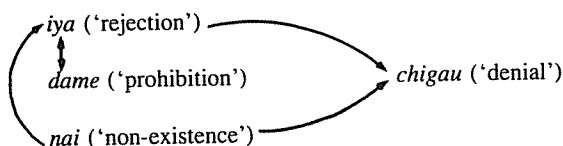
The early confusion of *iya* ('rejection') and *dame* ('prohibition') suggest ''an undifferentiated semantic complex [of] rejecting, demanding, commanding, prohibiting, and insisting'' (Clancy, 1985), along with independent status for *chigau* ('denial') and *nai* ('non-existence'). Note also that 'non-existence' and 'rejection' can be overextended to expressions of 'denial', while 'prohibition' is not extended to this function. What emerges is a more subtle map of a terrain that can be compared with languages that make fewer, more, or different distinctions.

4. Language-specific Co-occurrences Reveal Patterns of Conceptual Relevance

Earlier we noted ways in which combinability and placement of grammatical morphemes reveal general notions of semantic affinity and relevance. Co-occurrence patterns in particular languages can facilitate or impede acquisition. For example, noun suffixes expressing case notions are easily acquired (e.g., ergative, accusative, dative, and other case notions discussed above). But children have varying degrees of difficulty in acquiring conflations of casemarking with other semantic notions. Children easily learn to use different direct-object inflections for whole and partial objects, as in Russian (Gvozdev, 1949) and Finnish (Toivainen, 1980), but they have difficulty with distinctions of the accusative on the basis of animacy or natural gender, as in Russian and Polish (Smoczyńska, 1985). Children readily make the verb agree with the object of resultant activity, even if not allowed by the language, as in Italian (Antinucci & Miller, 1976); but agreement of the verb with the definiteness of the object is difficult, as in Hungarian (MacWhinney, 1985). It is easier for children to learn to change the form of the verb stem for aspect than for tense (Polish), and easier for tense than for person (Spanish, Portuguese). Detailed crosslinguistic comparison of this sort reveals universal patterns of conceptual relevance in semantic space, allowing for language-specific predictions of ease or difficulty of acquisition of particular conflations.

5. Crosslinguistic Differences in Degree of Coding an Area Reveal Linguistic Capacities

Finally, the crosslinguistic method is useful in instances where languages differ in the degree of elaboration of paradigms. For example, languages can be contrasted in terms of the dimensions that play a role in their verb paradigms. In our sample we have a range—from English, with minimal marking of person-number, through Portuguese, with extensive marking of person-number, to Hebrew, with extensive marking of person-number-gender. We need this full range in order to better understand the means available to children for constructing paradigms. Using data from a language like Portuguese, Bybee was able to discover generalization of person-marking across tenses and the use of 3SG as the base for generalizations within tenses (Bybee Hooper, 1979; Simões & Stoel-Gammon, 1979), while such patterns could simply not exist in a language like English. Hebrew developmental data were needed to show precocious acquisition of sex-marking of verbs in first and third persons, with difficulty in second person (Berman, 1985; Levy, 1983), since gender is not marked on the verb in most other languages in our sample. Similar comparisons could be made with respect to crosslinguistic differences in the degree of elaboration of other systems, such as casemarking, temporal and locative expressions, and gender and noun classifiers.

THE PLAN OF THE BOOK

By the late seventies, linguists and psycholinguists in many countries were convinced of the need for gathering data on the acquisition of different types of languages and using the crosslinguistic method for purposes such as those summarized above. It was clearly time to draw together available data as a resource for constructing more detailed and universally valid theoretical accounts of child language development. In November 1979 the authors of this volume were invited to prepare interpretive summaries of the course of acquisition of various languages. We were limited in our choice of languages on the basis of the richness of available data—but luckily a fair range of diversity is represented in our sample. The authors were asked to contribute to ''a book in which findings on the acquisition of different types of languages will be examined in terms of their contribution to language acquisition theory generally.'' Thus the chapters are intended to be selective reviews, rather than exhaustive summaries of the acquisition of each language. Each author was asked to approach his or her partucular language ''as a case study in a potential crosslinguistic typology of acquisitional problems,'' considering those data which ''contribute to an issue of general theoretical concern in developmental psycholinguistics.'' With these ends in mind, a common framework was suggested, as reflected in the following

outline and guiding questions (which we hope will be used for future acquisition summaries as well):

Introductory Materials

1. Brief grammatical sketch of the language or language group, presenting those linguistic facts which are relevant to the following developmental analysis.

2. Summary of basic sources of evidence, characterizing methods of gathering data, and listing key references. (Note that the sources of evidence vary widely, ranging from ethnographic and longitudinal study of several children in the early years, as in Kaluli, to longitudinal and experimental studies of many children across a large age range, as in English.)

3. Brief summary of the overall course of linguistic development in the language or language group. (The reader interested in obtaining a rapid crosslinguistic survey of the materials covered in the book is advised to read sections 1 and 3 of each chapter.)

Language Acquisition Data

Sections 4–6 present detailed summaries of the acquisition of linguistic forms, orienting to issues of ease and difficulty of acquisition of various systems of the language.

4. Typical errors: What sorts of errors typically occur? How can they be accounted for? What are the most general problems posed to the child in acquiring a language of this type?

5. Error-free acquisition: What systems are learned relatively free of error? How can this be accounted for? In what ways is a language of this sort well-suited to the child's language-acquisition capacities?

6. Timing of acquisition: What systems are acquired strikingly early or strikingly late in comparison with general crosslinguistic or English-based expectations? What constitutes linguistic complexity for the learner?

Data on the Setting of Language Acquisition

Sections 7–10 situate language acquisition in regard to issues of cognitive and social development, exploring interactions between linguistic form and conceptual representation, interpersonal communication, and individual patterns of acquisition.

7. Cognitive pacesetting of language development: What evidence is there for the influence of cognitive development on problems of acquiring linguistic forms? (This issue is the special topic of Johnston's chapter in Vol. 2.)

8. Linguistic pacesetting of cognitive development: What evidence is there for the role of language development in guiding or shaping the course of cognitive or conceptual development?

9. Input and adult-child interaction: In what ways do patterns of communication and social interaction influence the course of linguistic development?

10. Individual differences: What evidence is there for distinct patterns of acquisition within a language, based on individual characteristics of the type of learner? Are there data on individual differences that cast light on developmental processes?

Theoretical Conclusions

11. Reorganizations in development: At what points in development is there evidence for significant linguistic reorganization on the part of the child? What do reorganizations suggest about underlying processes of acquisition?
12. Theoretical implications: What general principles of language development are suggested by study of a language of this type? (The chapters, in Vol. 2, by Bowerman, MacWhinney, Peters, and Slobin seek general theoretical implications across the array of languages surveyed here.)
13. Suggestions for further study: What issues could be illuminated by further study of languages of this type, or in explicit compairson with other types of languages?

Preliminary versions of chapters on individual languages were studied in a seminar on crosslinguistic approaches to language acquisition at the 1980 Summer Linguistic Institute at the University of New Mexico, followed by a conference at Berkeley in November 1980, supported by the Sloan Foundation Program in Cognitive Science. Talmy Givón and Melissa Bowerman were invited to be discussants at that conference, examining the data from the perspectives of linguistics and developmental psycholinguistics. Judith Johnston explored the issue of cognitive prerequisites for language acquisition; and workshops were held on individual differences (Elena Lieven) and cultural determinants (Susan Ervin-Tripp). Some of the participants took part in an additional workshop in the summer of 1981 at the Max-Planck-Institut für Psycholinguistik in Nijmegen, The Netherlands (Aksu-Koç, Berman, Bowerman, Clark, Ervin-Tripp, Lieven, MacWhinney, Slobin, Smoczyńska). The National Science Foundation supported Slobin in systematic summary and interpretation of the body of crosslinguistic data (1980–83, Grant BNS 80-09340). Chapters were revised and re-written in 1982–83, with a fair degree of communication between authors. Although some writers have chosen alternative means of organization, all of the chapters address the basic issues in the above outline (to the extent that relevant data are available for the given language).

What emerged – and what we offer to our readers – is a compendium of detailed surveys of the acquisition of a number of different types of languages, drawn from a fair sampling of language groups: (1) INDO-EUROPEAN: (a) GERMANIC: English, German; (b) ROMANCE: French, Italian, Portuguese, Rumanian, Spanish; (c) SLAVIC: Polish; (2) SEMITIC: Hebrew; (3) FINNO-UGRIC: Hungarian; (4) URAL-ALTAIC: Turkish; (5) JAPANESE-RYUKYUAN: Japanese; (6)

TRANS-NEW GUINEA NON-AUSTRONESIAN: Kaluli; (7) POLYNESIAN: Samoan; (8) SIGN LANGUAGE: ASL.[5]

Given the states of the art in both developmental psycholinguistics and linguistics, our data are limited in particular ways. In almost all instances, we have data on production rather than comprehension—simply because it is easier to taperecord speech than to construct and evaluate measures of comprehension. Furthermore, much of the speech has been recorded in semi-controlled situations, or only in a small sample of situations in which speech naturally occurs. Ethnographic data, such as those of Schieffelin in New Guinea and Ochs in Samoa, show how much more can be learned from a detailed study of language-in-use; and experimental data, such as those reported by de Villiers and de Villers for English, how what can be learned from detailed and systematic probes of children's competence. The analyses are heavily weighted towards issues of the acquisition of morphology and word-order patterns—issues that can be dealt with fairly easily in terms of traditional grammar. Studies of English acquisition show what can be achieved by investigators who are equipped with more subtle and complex theoretical models of the language in question, but most of the languages of our collection have not yet been submitted to the sort of detailed syntactic study which would allow for acquisition data that would be relevant to issues of universal grammar. We are only beginning to glimpse the outlines of general syntactic theories that would lead to interesting crosslinguistic developmental questions.

We are also forced to rely heavily on error data, though all investigators raise caveats about the status of such data. What is of interest, of course, is not that the child was "wrong," but that the way in which he or she was wrong may illuminate some underlying attempt to structure language in a particular direction. Thus we are interested in the ways in which child speech regularly, frequently, and systematically deviates from the speech which the child hears. Error data thus must be evaluated in the light of the input, and often we lack sufficient input data to fully evaluate the source of children's "errors." The authors also pay close attention to the TIMING of development: early errors mean something different than late errors; errors occurring together at a point in development mean something different than isolated errors; errors that reorganize previous systems are different from errors at the onset of acquisition of a system; and so forth. Wherever possible, we also try to find elusive but highly significant "non-occurring errors"—that is, places in the grammar where our theories lead us to expect children to restructure the system, but where they quickly master adult

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[5]The individual chapters, all appearing in this series, were written by the following authors: ENGLISH: Jill and Peter de Villiers, GERMAN: Anne E. Mills, ROMANCE LANGUAGES: Eve V. Clark, POLISH: Magdalena Smoczyńska, with assistance of Richard M. Weist, HEBREW: Ruth A. Berman, HUNGARIAN: Brian MacWhinney, TURKISH: Ayhan A. Aksu-Koç and Dan I. Slobin, JAPANESE: Patricia M. Clancy, KALULI: Bambi B. Schieffelin, SAMOAN: Elinor Ochs, ASL: Elissa L. Newport and Richard P. Meier.

forms without error. Error-free acquisition, and developmental sequences in acquisition, thus supplement inferences drawn from errors. This range of data provides quite a rich base for crosslinguistic theorizing. In the background, however, we must always be aware of the fact that we have not only studied a limited sample of languages, but also a very small number of children, and that considerable individual differences exist between children acquiring a given language.

The authors are well aware of the many limitations of their material, yet they are able to lay out broad patterns of acquisition of their particular languages, suggesting general developmental principles in relation to other languages. It is our hope that the ways in which we have presented our materials and our ideas will stimulate further crosslinguistic study along similar lines, contributing to a psychological and developmental explanation for the phenomenon already noted by Roger Bacon in the thirteenth century: "Grammar is substantially the same in all languages, even though it may vary accidentally" (Lyons, 1968, p. 15).

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REFERENCES

Aksu, A. A. *Aspect and modality in the child's acquisition of the Turkish past tense.* Unpublished doctoral dissertation, University of California, Berkeley. 1978.

Aksu-Koç, A. A., & Slobin, D. I. The acquisition of Turkish. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Ammon, M. S., & Slobin, D. I. A cross-linguistic study of the processing of causative sentences. *Cognition,* 1979, 7, 3–17.

Antinucci, F., & Miller, R. How children talk about what happened. *Journal of Child Language,* 1976, *3,* 167–189.

Argoff, H. D. *The acquisition of Finnish inflectional morphology.* Unpublished doctoral dissertation, University of California, Berkeley, 1976.

Badry, F. *Acquisition of lexical derivation rules in Moroccan Arabic: Implications for the development of Standard Arabic as a second language through literacy.* Unpublished doctoral dissertation, University of California, Berkeley, 1983.

Berman, R. The acquisition of Hebrew. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Bloom, L., Lahey, M., Hood, L., Lifter, K., & Fiess, K. Complex sentences: Acquisition of syntactic connections and the semantic relations they encode. *Journal of Child Language,* 1980, *7,* 235–261.

Blount, B. G. *Acquisition of language by Luo children.* Unpublished doctoral dissertation, University of California, Berkeley, 1969.

Bowerman, M. F. *Early syntactic development: A cross-linguistic study with special reference to Finnish.* Cambridge: Cambridge University Press, 1973.

Bowerman, M. Learning the structure of causative verbs: A study in the relationship of cognitive, semantic and syntactic development. *Papers and Reports on Child Language Development* (Department of Linguistics, Stanford University) 1974, *8,* 142–178.

Bowerman, M. Beyond communicative adequacy: From piecemeal knowledge to an integrated system in the child's acquisition of language. *Papers and Reports on Child Language Development* (Department of Linguistics, Stanford University), 1981, *20,* 1–24.

Bybee, J. L. *Morphology: A study of the relation between meaning and form.* Amsterdam: John Benjamins, 1985.

Clancy, P. M. *The acquisition of narrative discourse: A study in Japanese.* Unpublished doctoral dissertation, University of California, Berkeley, 1980.

Clancy, P. The acquisition of Japanese. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1), Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Clancy, P., Jacobsen, T., & Silva, M. The acquisition of conjunction: A cross-linguistic study. *Papers and Reports on Child Language Development* (Department of Linguistics, Stanford University), 1976, *12,* 71–80.

Clark, E. The acquisition of Romance, with special reference to French. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Eisenberg, A. R. *Language acquisition in cultural perspective: Talk in three Mexicano homes.* Unpublished doctoral dissertation, University of California, Berkeley, 1982.

Erbaugh, M. S. *Coming to order: Natural selection and the origin of syntax in the Mandarin speaking child.* Unpublished doctoral dissertation, University of California, Berkeley, 1982.

Gheorgov, I. A. *Ein Beitrag zur grammatischen Entwicklung der Kindersprache.* Leipzig: Engelmann, 1908. [Also in *Archiv für die gesamte Psychologie,* 1908, *11,* 242–432.]

Gvozdev, A. N. Značenie izučenija detskogo jazyka dlja jazykovedenija. *Rodnoj jazyk i literatura v trudovoj škole,* 1928, No. 3, 4, 5. [Reprinted in A. N. Gvozdev, *Voprosy izučenija detskoj reči;* Moscow: Izd-vo Akademii Pedagogičeskix Nauk RSFSR, 1961.]

Gvozdev, A. N. *Formirovanie u rebenka grammatičeskogo stroja russkogo jazyka.* Moscow: Izd-vo Akademii Pedagogičeskix Nauk RSFSR, 1949.

Hopper, P. J., & Thompson, S. Transitivity. *Language,* 1980, *56,* 251–299.

Johnston, J. R., & Slobin, D. I. The development of locative expressions in English, Italian, Serbo-Croatian and Turkish. *Journal of Child Language,* 1979, *6,* 529–545.

Karmiloff-Smith, A. *A functional approach to child language.* Cambridge: Cambridge University Press, 1979.

Kernan, K. T. *The acquisition of language by Samoan children.* Unpublished doctoral dissertation, University of California, Berkeley, 1969.

Levy, Y. It's frogs all the way down. *Cognition,* 1983, *15,* 75–93.

Lyons, J. *Introduction to theoretical linguistics*. Cambridge: Cambridge University Press, 1968.

MacWhinney, B. *How Hungarian children learn to speak*. Unpublished doctoral dissertation, University of California, Berkeley, 1973.

McCarthy, D. Language development. In W. S. Monroe (Ed.), *Encyclopedia of Educational Research*. American Educational Research Association, 1950. [Reprinted in A. Bar-Adon & W. F. Leopold (Eds.), *Child language: A book of readings*. Englewood Cliffs, NJ: Prentice-Hall, 1971.]

MacWhinney, B. Hungarian language acquisition as an exemplification of a general model of grammatical development. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Mills, A. E. The acquisition of German. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Mitchell-Kernan, C. *Language behavior in a black urban community*. Unpublished doctoral dissertation, University of California, Berkeley, 1969.

Parisi, D., & Antinucci, F. Lexical competence. In G. B. Flores d'Arcais & W. J. M. Levelt (Eds.), *Advances in psycholinguistics*. Amsterdam: North-Holland, 1970.

Peters, A. M. Language segmentation: Operating principles for the perception and analysis of language. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Pye, C. L. *The acquisition of grammatical morphemes in Quiche Mayan*. Unpublished doctoral dissertation, University of Pittsburgh, 1979.

Radulovic, L. *Acquisition of language: Studies of Dubrovnik children*. Unpublished doctoral dissertation, University of California, Berkeley, 1975.

Savasir, I., & Gee, J. The functional equivalents of the middle voice in child language. *Proceedings of the Berkeley Linguistic Society*, 1982.

Schieffelin, B. B. The acquisition of Kaluli. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Simões, M. C. P., & Stoel-Gammon, C. The acquisition of inflections in Portuguese: A study of the development of person markers on verbs. *Journal of Child Language*, 1979, *6*, 53–67.

Slobin, D. I. (Ed.) *A field manual for cross-cultural study of the acquisition of communicative competence*. Berkeley, CA: ASUC Bookstore, 1967.

Slobin, D. I. Cognitive prerequisites for the development of grammar. In C. A. Ferguson & D. I. Slobin (Eds.), *Studies of child language development*. New York: Holt, Rinehart & Winston, 1973.

Slobin, D. I. The origins of grammatical encoding of events. In W. Deutsch (Ed.), *The child's construction of grammar*. London: Academic Press, 1981.

Slobin, D. I. Universal and particular in the acquisition of language. In E. Wanner & L. R. Gleitman (Eds.), *Language acquisition: The state of the art*. Cambridge: Cambridge University Press, 1982.

Slobin, D. I. Crosslinguistic evidence for the language-making capacity. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Slobin, D. I., & Bever, T. G. Children use canonical sentence schemas: A crosslinguistic study of word order and inflections. *Cognition*, 1982, *12*, 229–265.

Smoczynska, M. The acquisition of Polish. In D. I. Slobin (Ed.), *The crosslinguistic study of language acquisition* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1985.

Stern, C., & Stern, W. *Die Kindersprache: Eine psychologische und sprachtheoretische Untersuchung*. Leipzig: Barth, 1907.

Stross, B. *Language acquisition by Tenejapa Tzeltal children*. Unpublished doctoral dissertation, University of California, Berkeley, 1969.

Toivainen, J. *Inflectional affixes used by Finnish-speaking children aged 1–3 years*. Helsinki: Suomalaisen Kirjallisuuden Seura, 1980.

Weist, R. M., Wysocka, H., Witkowska-Stadnik, K., Buczowska, E., & Konieczna, E. The defective tense hypothesis: On the emergence of tense and aspect in child Polish. *Journal of Child Language*, 1984, *11*, 347–374.