Chapter 2
The Role of Interaction Formats in Language Acquisition

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Learning a native language is an accomplishment within the grasp of any toddler, yet discovering how children do it has eluded generations of philosophers and linguists. I would like to take this opportunity to ask anew some puzzling questions about what it is, beyond a splendid nervous system, that makes it possible for the young child to acquire language so swiftly and so effortlessly. Perhaps they are no longer puzzling questions save to those of us who have spent a great deal of time working and brooding over whether the acquisition of knowledge about the social world and about the world generally is in some sense constitutive of language.

The awkward dilemma that plagues questions about the original nature and later growth of human faculties inheres in the unique nature of human competence. For human competence is both biological in origin and cultural in the means by which it finds expression. While the *capacity* for intelligent action has deep biological roots and discernible evolutionary history, the *exercise* of that capacity depends upon man appropriating to himself modes of acting and thinking that exist not in his genes but in his culture.

I shall argue in this chapter that language acquisition "begins" before the child utters his[1] first lexicogrammatical speech. It begins when mother and infant create a predictable format of interaction that can serve as a microcosm for communicating and for constituting a shared reality. The transactions that occur in such formats constitute the "input" from which the child then masters grammar, how to refer and mean, and how to realize his intentions communicatively.

The child, however, could not achieve these prodigies of language acquisition without, at the same time, possessing a unique and predisposing set of language-learning capacities—something akin to what Noam Chomsky has

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[1]Masculine pronouns are used throughout this chapter to refer to the child; feminine pronouns refer to the mother.

called a Language Acquisition Device (LAD). But the infant's Language Acquisition Device could not function without the aid given by an adult who enters with him into a transactional format. That format, initially under the control of the adult, provides a Language Acquisition Support System (LASS). It frames or structures the input of language and interaction to the child's Language Acquisition Device in a manner to "make the system function." In a word, it is the interaction between LAD and LASS that makes it possible for the infant to enter the linguistic community—and, at the same time, the culture to which the language gives access. The remainder of this chapter is an amplification of how this process works.

Two Conflicting Views of Language Acquisition

Saint Augustine believed that language acquisition was quite simple. Allegedly recollecting his own childhood, he said: "When they named any thing, and as they spoke turned towards it, I saw and remembered that they called what one would point out by the name they uttered. . . . And thus by constantly hearing words, as they occurred in various sentences, I collected gradually for what they stood." But a look at children as they actually acquire language shows Saint Augustine to be far, far off target. Alas, he had a powerful effect both on his followers and on those who set out to refute him.

Developmental linguistics is now going through rough times that can be traced back to Saint Augustine as well as to the reactions against him. It is one of the mysteries of Kuhnian scientific paradigms that this empiricist approach to language acquisition persisted in psychology (if not in philosophy, where it was overturned by Frege and Wittgenstein) from its first enunciation by Saint Augustine to its most recent form in B. F. Skinner's *Verbal Behavior*. It would be fair to say that the persistence of the mindless behavioristic version of Augustianism finally led to a readiness, even a reckless readiness, to be rid of it. For it was not only an inadequate account, but one that damped inquiry by its domination of "common sense." It set the stage for the Chomskyan revolution.

It was to Noam Chomsky's credit that he boldly proclaimed the old enterprise bankrupt. In its place he offered a challenging, if counterintuitive, hypothesis based on nativism. He proposed that the acquisition of the *structure* of language depended upon a Language Acquisition Device that had as its base a universal grammar or a "linguistic deep structure" that humans know innately and without learning. LAD was programmed to recognize in the surface structure of any natural language encountered its deep structure by virtue of the kinship between innate grammar and the grammar of natural languages. The universal grammatical categories that programmed the LAD were in the innate structure of the mind. No prior nonlinguistic knowledge of the world was necessary, and no privileged communication with another speaker was required. The only constraints on rate of linguistic development

were psychological limitations on *performance*: the child's limited but growing attention and memory span, for example. Linguistic *competence* was there from the start, ready to express itself when performance constraints were extended by the growth of requisite skills.

It was an extreme view, but in a stroke it freed a generation of psycholinguists from the dogma of association-cum-imitation-reinforcement. It turned attention to the problem of rule learning, even if it concentrated only on syntactic rules. By declaring learning theory dead as an explanation of language acquisition (one of the more premature obituaries of our times), it opened the way for a new account.

George Miller put it well. We now had *two* theories of language acquisition: One of them, empiricist associationism, was impossible; the other, nativism, was miraculous. But the void between the impossible and the miraculous was soon to be filled in, albeit untidily and partially.

Initial Cognitive Endowment

If we are to consider the transition from prelinguistic communication to language, particularly with a concern for possible continuities, we had better begin by taking as close a look as we can at the so-called "original endowment" of human beings. Might that endowment affect the acquisition and early use of language?

Let me begin with some conclusions about perception, skill, and problem-solving in the prelinguistic infant, and consider how they might conceivably predispose the child to acquire "culture" through language.

The first of these conclusions is that much of the cognitive processing going on in infancy appears to operate in support of goal-directed activity. From the start, the human infant is *active* in seeking out regularities in the world about him. The child is active in a uniquely human way, converting experience into species-typical means-end structures.

To say that infants are also "social" is to be banal. They are geared to respond to the human voice, to the human face, to human action and gesture. Their means-end readiness is easily and quickly brought into coordination with the actions of their caretakers. The pioneering work of Daniel Stern and Berry Brazelton and their colleagues underlines how early and readily activated infants are by the adults with whom they interact and how quickly their means-end structuring encompasses the actions of another. The infant's principal "tool" for achieving his or her ends is another familiar human being.

Infants are, in a word, tuned to enter the world of human action. Obvious though the point may seem, we shall see that it has enormous consequences for the matter at hand. This leads directly to the second conclusion, which concerns infant "endowment."

An enormous amount of the child's activity during the first year and a half

of life is extraordinarily social and communicative. Social interaction appears to be both self-propelled and self-rewarding. Many students of infant behavior, like Tom Bower, have found that a social response to the infant is the most powerful reinforcer one can use in ordinary learning experiments. Conversely, withholding social response to the infant's initiatives is one of the most disruptive things one can do—an unresponding face, for example, will soon produce tears.

While the infant's attachment to the mother (or caretaker) is initially assured by a variety of innate response patterns, there very quickly develops a reciprocity that the infant comes to anticipate and count on. For example, if during play the mother assumes a sober immobile face, the infant shows fewer smiles and turns his head away from the mother more frequently than when the mother responds socially, as Edward Tronick and his colleagues have shown. The existence of such reciprocity—buttressed by the mother's increasing capacity to differentiate as infant's "reasons" for crying as well as by the infant's capacity to anticipate these consistencies—soon creates a form of mutual attention, a harmony or "intersubjectivity," whose importance we shall take up later.

In any case, a pattern of inborn initial social responses in the infant, elicited by a wide variety of effective signs from the mother, is soon converted into a very complex joint anticipatory system that converts initial biological attachment between mother and child into something more subtle and more sensitive to individual idiosyncracies and to forms of cultural practice. *The third conclusion is that much of early infant action takes place in constrained, familiar situations and shows a surprisingly high degree of order and "systematicity."* Children spend most of their time doing a very limited number of things. Long periods are spent in reaching and taking, banging and looking, etc. Within any one of these restricted domains, there is striking "systematicity." Object play provides an example. A single act (like banging) is applied successively to a wide range of objects. Everything on which the child can get his hands is banged. Or the child tries out on a single object all the motor routines of which he or she is capable—grasping the object, banging it, throwing it to the floor, putting it in the mouth, putting it on top of the head, running it through the entire repertory. There may be differences of opinion concerning the "rules" that govern this orderly behavior, but there can be no quarrel about its systematicity.

It is not in the least surprising, in light of this conclusion, that infants enter the world of language and of culture with a readiness to find or invent systematic ways of dealing with social requirements and linguistic forms. The child reacts "culturally" with characteristic hypotheses about what is required and enters language with a readiness for order.

There are two important implications that follow from this. The first is obvious, though I do not recall ever having encountered the point. It is that from the start, the child becomes readily attuned to "making a lot out of a

little" by combination. He typically works on varying a small set of elements to create a larger range of possibilities.

The second implication is more social. The acquisition of prelinguistic and linguistic communication takes place, in the main, in the highly constrained settings to which we are referring. The child and his caretaker readily combine elements in these situations to extract meanings, assign interpretations, and infer intentions. A decade ago there was considerable debate among developmental linguists about whether in writing "grammars" of child speech one should use a method of "rich interpretation"—taking into account not only the child's actual speech but also the ongoing actions and other elements of the context in which speech was occurring. Today we take it for granted that one must do so. For it is precisely the combining of all elements in constrained situations (speech and nonspeech) that provides the road to communicative effectiveness. It is for this reason that I shall place such heavy emphasis on the role of "formats" in the child's entry into language.

A fourth conclusion about the nature of infant cognitive endowment is that its systematic character is surprisingly abstract. Infants during their first year appear to have rules for dealing with space, time, and even causation. A moving object that is transformed in appearance while it is moving behind a screen produces surprise when it reappears in a new guise.

Objects explored by touch alone are later recognized by vision alone. The infant's perceptual world, far from being a blooming, buzzing confusion, is rather orderly and organized by what seem like highly abstract rules.

It is *not* the case that language, when it is encountered and then used, is the first instance of abstract rule following. It is not, for example, in language alone that the child makes such distinctions as those between specific and nonspecific, between states and processes, between "punctual" acts and recurrent ones, between causative and noncausative actions. These abstract distinctions, picked up with amazing speed in language acquisition, have analogues in the child's way of ordering his world of experience. Language will serve to specify, amplify, and expand distinctions that the child already has about the world.

These four cognitive "endowments"—means-end readiness, transactionality, systematicity, and abstractness—provide foundation processes that aid the child's language acquisition. None of them "generates" language, for language involves a set of phonological, syntactic, semantic, and illocutionary rules and maxims that constitute a problem space of their own. But linguistic or communicative hypotheses depend upon these capacities as enabling conditions.

Such sensitivity grows in the process of fulfilling certain general, nonlinguistic functions—predicting the environment, interacting transactionally, getting to goals with the aid of another, and the like. These functions are first fulfilled primitively if abstractly by prelinguistic communicative means. Such primitive procedures, I will argue, must reach requisite levels of functioning

before *any* Language Acquisition Device (whether innate or acquired) can begin to generate "linguistic hypotheses."

Support for Language Acquisition

We can say, I think, that the last decade of research strongly supports the view that language acquisition *is* aided by the acquirer gaining world knowledge concurrently with or in advance of language, and is aided also by maturation and by a privileged social relationship between the child and an adult who is moderately well tuned to the child's linguistic level. If there is a Language Acquisition Device, the input to it is not a shower of spoken language but a highly interactive affair shaped, as we have already noted, by some sort of an adult Language Acquisition Support System.

The view that acquisition depends upon interaction as the clue-giving source for language acquisition has several variants. The most recent grows out of speech-act theory. Its central argument is that prelinguistic infants already know, say, how to delare and demand (e.g., Clark & Clark, 1977) by means other than language—by gesture and intonation, for example. Mastering the more conventional linguistic forms for carrying out these acts is a matter of a substituting new linguistic procedures for old nonlinguistic ones with the aid and/or modeling of an adult who already knows the language and its social conventions. Much of the literature on Motherese deals with how this is presumably brought about (e.g., Snow & Ferguson, 1977). Two of my own studies are typical of this approach (Ninio & Bruner, 1978; Bruner, Ratner, & Roy, 1982). The question that such studies pose, to out it baldly, is whether the prelinguistic communicative functions that the child can fulfill before the development of language proper are either constitutive of the language that he is about to learn, or whether they even provide any clues to the aspiring learner about the formal structure of language.

To this point we have been presupposing that the child is operating pretty much of his own initiative, even in social interaction and certainly in use of previously acquired world knowledge as a guide. Insofar as the adult partner has come into the picture, it is rather as a model from whom the child can get an input of the language in order to make his or her own inductions, piercing discoveries, or intuitive recognitions, depending upon what view you may take of the process. But may not the adult herself arrange the environment and her encounters with the child in ways that *scaffold* language input and interaction to make it better fit the child's "natural" way of proceeding? She, after all, *knows* the language that the child is trying to master and she probably has an implicit and practical theory about how to help the child learn it. There may, in a word, be a Language Acquisition Support System that readies or that formats the input of language to the child in a way that makes its rules more transparent to the child's Language Acquisition Device. *LASS*, so to speak, helps *LAD*. We shall want to reexamine the fine-tuning hypothesis later with this in mind.

One final point before turning to a more detailed consideration of those already introduced. Beyond early world knowledge and social interaction as aids to the acquisition of language, there is one other possibility, one particularly well developed in a recent paper by Shatz (1982). Might it be the case that, though language is a problem space of its own, there are certain *general* cognitive processes developed in the child's early years that can also serve him or her in cracking the linguistic code? This is not the same as Piaget's argument that cognitive development *produces* language as one of its spinoffs or symptoms. Rather, it asserts that common processes are involved in acquiring world knowledge, skilled social interaction, and language. Examples are not hard to find: Learning to decompose tasks into constituent routines and then to recombine the constituents into new procedures is, for example, a well-observed feature of the infant's sensorimotor learning (Bruner, 1973). In a formal sense, it is the same kind of process involved in learning to decompose and recompose the flow of language into its constituents. Or, indeed, certain rules of perceptual attention can operate as effectively in spotting diacritica in speech as they can for spotting distinctive sensory features in sensory learning. Segmenting action into goal-completion cycles may, as noted, predispose to spotting aspectual completives. Slobin's (1973) account of how the child learns to pick up stressed, initial, and terminal elements of words and phrases is based upon this assumption.

There is a diachronic side to this issue as well that, alas, must remain untestable. Language systems in their earliest development probably had to be based upon cognitive skills that were widely distributed and readily accessible to all members of the human group, in order to assure universal participation. If that were the case (the alternative being that the possession of language initially marked off a human elite that were then selected for their language ability), then the forms of language that came into being would be of a kind that would somehow be easy for human beings to learn. This would either mean that they were "natural' cognitive skills, or that they were peculiarly well-matched to the mode of social interaction into which human beings naturally entered. On *a priori* grounds, based on Julian Huxley's dictum of biological redundancy in all communication systems, I find it most plausible to accept both these propositions. There is one other good reason to give a central place to the operation of general cognitive capabilities in the acquisition of language. So much of human language operates deictically, by dint of using nonlinguistic context for making meaning clear, that it is difficult to imagine how a *special* gift for language could have emerged independently of other ways of processing information about the environment.

Shared Formats and Language Acquisition

I want to begin with the role of pragmatics in language generally and in language acquisition particularly. I think of pragmatics as entailing quite

different processes from those involved in mastering a set of syntactic or semantic codes. Semantics and syntax are formulated to deal almost exclusively with the communication of information, and that, I suppose, is why one can refer to each as emboding a code of elements which "stand for" some knowledge in the "real world." Pragmatics is not restricted in that way. It is the study of how speech is used to accomplish such social ends as promising, humiliating, assuaging, warning, declaring, requesting. Its elements do not "stand for" anything: They *are* something. Even silence, though it cannot be specified syntactically or semantically, may speak volumes in the context in which it occurs. It is certainly not just like a grammatical deletion rule where patterned absence implies presence. In this perspective, language is a vehicle for doing things with and to others, many of which could not be conceived but for language. Pragmatics deals, then, with the extension of social interaction by the use of speech. It is a *commitment* to social interaction by the use of speech.

In this view, pragmatics necessarily relates to discourse and, at the same time, is always context dependent, that is, dependent upon a *shared* context. Discourse presupposes a reciprocal commitment between speakers. It is a complex commitment that includes at least three elements: (1) a shared set of conventions for establishing speaker intent and listener uptake, including procedural conventions like those proposed by Grice (1975) in his celebrated discussion of Conversational Principles; (2) a shared basis for exploiting the deictic possibilities of spatial, temporal, and interpersonal context, subject to "shifting" in Jakobson's classic sense (1971–79); and (3) a conventional means for jointly establishing and retrieving presuppositions. These three elements—announcement of intention, regulation of deixis, and control of presupposition—give discourse its future, present, and past orientations.

A great many acts of discourse will be found to be ways of "tuning" these forms of reciprocal commitment. Indeed, some linguistic theorists have even proposed that the grammatical categories of language exist, *inter alia*, to assure such tuning and calibration as well as to assure reference and meaning. Benveniste (1971) raised the question of the function served by personal pronouns, a universal feature of all known languages. Why are they needed, he asked, when in fact we could accomplish the same semantic ends more reliably by using nominals to specify people or objects rather than having to employ tricky, shifter pronominals. His answer, of course, was that shifters like "I" and "you" serve as economical ways of sharing and calibrating the perspectives of two speakers through reciprocal role shift.

I think it will be apparent from the foregoing that pragmatics of discourse cannot be based upon ordinary grammatical categories alone. For grammer is traditionally based upon the concept of the sentence and on "sentence parts." Yet the performance, deictic, and presuppositional rules of discourse depend for their power upon the privileges of occurrence of expressions in discourse, not just in individual sentences. You will perhaps recall that the object of the

Prague School was to derive sentence grammar constitutively from discourse such that, for example, topic and subject were said to be the "given" in discourse and comment or predicate the "new."

There is another sense in which interaction motivates grammatical rules. One of the major tasks in interacting with another is the regulation of joint attention. Fillmore (1977) proposes that the function of sentence grammars is to establish a *perspective* on a *scene* that the sentence depicts or represents. Perspective setting demands forefronting and backgrounding for the direction of attention, and there are many grammatical devices for accomplishing these ends, such as subject placement, passivization, clefting, etc.

We will see in a moment that early interaction abounds in procedures for regulating attentional perspective on scenes in the form of vocatives, demonstratives, pointing gestures, intonation contours, etc., employed by both adult and child. It also abounds in role shifting and in the other forms of discourse tuning to which I have referred. This brings me to the central issue.

All of this leads to the hypothesis that in order for the young child to be clued into the language, he must first enter into social relationships of a kind that function in the manner consonant with the uses of language in discourse—relating to intention sharing, to deictic specification, and to the establishment of presupposition. Such a social relationship I shall call a *format*. The format is a rule-bound microcosm in which the adult and child *do* things to and with each other. In its most general sense, it is the instrument of patterned human interaction. Since formats pattern communicative inter-action between infant and caretaker before lexico-grammatical speechs begins, they are crucial vehicles in the passage from communication to language. Let us consider their nature in more detail.

A format entails formally a contingent interaction between at least two acting parties, contingent in the sense that the responses of each member can be shown to be dependent upon a prior response of the other. Each member of the minimal pair has a goal and a set of means for its attainment such that two conditions are met: first, that a participant's successive responses are instrumental to that goal, and second, that there is a discernible stop order in the sequence indicating that the terminal goal has been reached. The goals of the two participants need not be the same; all that is required is that the conditions of intraindividual and interindividual response contingency be fulfilled. Formats, defined formally in this sense, represent a simple instance of a "plot" or "scenario."

Formats, however, grow and can become as varied and complex as necessary. Their growth is effected in several ways. They may in time incorporate new means or strategies for the attainment of goals, including symbolic or linguistic ones. They may move toward coordination of the goals of the two partners not only to agreement, but also to a division of labor and a division of initiative. And they may become conventionalized or canonical in a

fashion that permits others within a symbolic community (e.g., a "speech community") to enter the format in a provisional way in order to learn its special rules.

Formats are also modular in the sense of being amenable as subroutines for incorporation in larger-scale, longer-term routines. A greeting format, for example, can be incorporated in a larger-scale routine involving other forms of joint action. In this sense, any given format may have a hierarchical structure, the parts being interpretable in terms of their placement in a larger structure. The creation of higher-order formats by incorporation of subroutine formats is one of the principal sources of presupposition. What is incorporated becomes implicit or presupposed.

Formats, save when highly conventionalized, cannot be identified independently of the perceptions of the participants. In this sense, they have the property of contexts generally in being the result of joint definition by the participants. The communal definition of formats is one of the major ways in which a community controls the interaction of its members. Once a format is conventionalized and "socialized," it comes to be seen as having objective status. Eventually, formats provide the basis for speech acts and can be reconstituted as needed by linguistic means alone.

One special property of formats involving an infant and an adult (though it may be a property of formats in general) is that they are asymmetrical with respect to the "consciousness" of the members, with one "knowing what's up," and the other knowing not or knowing less. Consciousness in this sense is not intended to imply psychological heavy weather. I hope I can make that clearer later. I intend it in the sense used by Vygotsky (1962) when he discussed how the adult helps the child achieve realization of the Zone of Proximal Development. The adult serves as model, scaffold, and monitor until the child can take over on his own. A good illustration of this is provided in a study by Kaye and Charney (1980) in which the adult takes over the function of keeping turns in discourse alternation until the child develops the procedures necessary to do so on his own.

Let us now return to the three rubrics with which I introduced the idea of discourse: intentions, deixis, and presupposition. With respect to the goal-oriented aspect of formats, early formats usually involve joint, overt activity with a clear-cut, ritualized, successive structure (e.g., games like Hide-and-Seek, Give-and-Take, Peek-a-Boo, etc.) As my colleagues and I (Bruner & Sherwood, 1976; Ratner & Bruner, 1978) have tried to show, signaling marks the successive steps toward the final goals of these games, with such aspectual completives as "All-Gone" and "Dere" among the first on the scene, much like the young Brazilians reported by Campos (1979). Once children learn to respond to these action formats, they soon learn to call them up and to expect uptake. The signaling becomes increasingly conventionalized and consensual (with the mother imitating the child more often than in the reverse direction) and the child increasingly takes over initiative. (Bruner, 1978). As the

signaling becomes more adept, it begins to pace the game rather than being merely an accompaniment to it (Bruner, 1978).

Before the second year is far advanced, the child-mother pair are well launched not only into games but also into procedures for realizing basic linguistic functions like indicating and requesting. Consider the case of requesting reported by Bruner, Ratner, and Roy (1982). There is a long preliminary period in which Richard, one of the children they observed, first mastered ways of requesting nearby visible objects by pointing and then by intonation on an appropriate nominal; then invisible objects by indicating direction or canonical locus of objects; then on requesting assistance in carrying out actions: "invitations" and offers. This is particularly difficult, for it requires his analyzing the structure of a task and signaling *that* he wants assistance, on *what* object, but also what *kind* of assistance it is. He has learned nominals, verbs, vocatives, demonstratives—all in aid of his requests. At 20 months old, Richard adopted a "successive guidance" strategy for managing complex requests for assistance in action. He starts the round of exchanges with a requestive vocative or with an intonationally marked nominal or verb. When his mother signals uptake but incomprehension of what *kind* of help he is requesting, he follows by introducing a second element, usually a locative, to indicate the place where the objects is or the locus of the desired action. This may be followed by a verb indicating the action requested. And so it continues step by step until he succeeds in getting the message across in successive steps.

By the time Richard is 22 months, however, his mother will no longer tolerate being dealt with in this robotic way and insists that he fulfill one of the felicity conditions on requestiong—full disclosure of intention in advance. "No, Richard, tell me what you want *first*," she demands. Richard responds with one of his first three-word sentences, strung together with slight pauses but including "Mummy" as Agent, the required Action, and the sought-after Object, the whole marked with what is to be the requestive intonation contour of such utterances on later occasions. All of which is not to say that there was anything in the prior interaction per se that could have given Richard any clues about how to linearize such a sentence. There is no "natural order" in action that tells you the order of corresponding elements in a sentence— though I was once tempted to believe something like that about Subject-Verb-Object orders (Bruner, 1975). It is the familiarity and structure of the request formats that frees Richard and guides him in finding the linguistic procedures required. The adult helps hold the child's goal invariant against distraction, reduces the degrees of freedom in the choices he has to make lexically and grammatically by coordinating her own utterances with established action segments, and generally serves as linguistic scaffold. Above all, she helps him link his intentions to linguistic means for their attainment.

In the limited space available, I would like to touch very lightly on the second feature of formats: their role in providing a base for context sensitivity

and deixis. It was Grace DeLaguna (1927) who noted in her remarkable book of more than half a century ago that you could not know what a child meant without knowing what he or she was doing while speaking. The key to going beyond this primitive deictic indexicality depends upon waht C. S. Peirce (1931–59) called the transformation of "sign vehicles." (It is to Michael Silverstein (1981) that I am particularly grateful for pointing out the relevance of Peirce's proposal for developmental linguistics.)

Peirce proposed that initial language is indexical and necessarily deictic, dependent upon a contiguity or "pointing" relation between sign and significate. With the development of a sign system, a second feature is added: Language can then operate intralinguistically in the sense that signs can point to or be related to other signs. The context to which reference is made may still be concrete and specific, but it is linguistic. As the child gains further insight into the language as a codified system of representation, he comes to operate not on concrete events, whether directly in experience or represented in words, but upon possible combinations derived from operations on the language itself. This last accomplishment Peirce refers to as the metapragmatic level, and at this point the child is able to turn around on his language, correct it as needed, quote it, amplify what was meant, even define it. A good example of the transition from intralinguistic to metapragmatic speech is provided in Maya Hickman's (1982) paper on children reporting what they had seen and heard in an animated cartoon. This last stage of the child's development, however, takes place later than the ages I want to consider and need not concern us.

Let me illustrate the manner in which, thanks to the presupposition-conserving structure of a continuing and growing format, the child and mother switch from indexical to intralinguistic procedures. Consider how the mother and child come to signal "given" and "new" in their interaction when Richard is between 18 and 22 months. In the growth of labeling (cf. Ninio & Bruner, 1978), Richard's mother sets up a routine for book reading in which she employs four invariant discourse markers: an initial attentional vocative in the form "Oh look, Richard"; followed, when his attention is gained, by the query "What's that, Richard?" with stress and rising intonation peaking at the second word; followed, if Richard should reply by any vocalization even in the form of a babble string initially, by "Yes, that's an X"; and terminated by a reinforcing remark like "That's very good."

At this point when Richard can reliably produce the correct label or some phonologically constant form that his mother can imitate herself, her intonation contour changes. For items of this "known-to-be-known" class, she still uses her second discourse marker ("What's that, Richard?"), but now with a falling intonation on the second word. It is as if she is signaling that she knows that he knows, and the shift often produces "knowing smiles" between the two. Then, shortly after, she introduces an extended routine where, after the presuppositionally marked request for a label, she asks a second question calling for an answer in the form of a predicate of action or of state related to

the child's just-provided label—for example, "What's the X doing?"—with stress and rising intonation on the terminal word. The same sorting of given and new can be observed in the development of request, when Richard's mother responds to his wave toward a canonical locus, where he thinks an object may be, with "Something in the ice box? What do you want in the ice box?" At each opportunity the mother is cannily adding nominals or even anaphoric pronominals to the indexical procedures the child is using, and then using these an intralinguistically presupposed in later discourse.

In short, formats in discourse provide the necessary microcosms in which the child can signal intentions, operate indexically and then intralinguistically, and develop presuppositions, all within the interactions that have properties that are easily mapped onto the functions and forms of language. At the start, formating is under the control of the adult. Increasingly formats become symmetrical and the child can initiate them as readily as the adult. All cultures do not, of course, format early discourse in the same way—as we know form the pioneering work of Schieffelin (1979) on the Kaluli of Papuan New Guinea who, unlike us, "show" more than they interact. But the hypothesis I am putting forth is that all cultures have ways of formating interaction and discourse so as to highlight those features of the world and of social interaction that map most readily onto linguistic categories and grammatical rules. It is this feature of early interaction that I have referred to as the Language Acquisition Support System, or LASS, without which an acquisition device, LAD, could not make much progress.

Some Conclusions

Let me return to Marilyn Shatz's (1982) discussion of the ways in which social interaction might aid the child in developing insights into syntax—and it is important to note that it is syntax with which she is exclusively and (I think) properly concerned. She presents four views that can be briefly characterized as follows: (1) Syntax is derived directly from prior social knowledge; (2) syntax is derived from prior semantic representations that achieve deep structure by being transformed by social interactions; (3) syntax is not derived from social interaction but merely faciliated by the routinization of social interaction which frees necessary processing capacity; and, as already mentioned, (4) syntax and the complexities of rule-bound social interaction depend upon the same types of cognitive processes at any given stage of development, and consequently children about the learning of the two different systems in a common way.

Shatz's analysis is useful; I can even sail happily under the flag of her last two rubrics. Yet I find her classification system constricting for its failure to give a full enough role to the adult and for its incomplete analysis of the nature of the formats in which the child's interactive learning and syntactic acquisition occur. In effect, she treats the child as if he were flying solo, in the

best tradition of both theories of learning and of information processing. But the solo model of social learning, however useful it may be in goading us to look for internal structures and processes, is just not good enough.

What I mean by this assertion requires me to revert briefly to Vygotsky's (1962) conception of the Zone of Proximal Development, mentioned earlier in passing. Vygotsky comments on the child's progress from arithmetic to algebra in mathematical learning in a way that is relevant to our discussion. It is not possible, he notes, for the child to move to the "higher ground" of algebra unless he has grasped enough of concrete arithmetic operations to appreciate hints that relate to the more categorical status of these operations—that any number can be treated as an unknown, x; that while a blind Venetian and a Venetian blind cannot be substituted for each other, three twos can substitute for two threes; and so on. In teaching language, unlike in teaching algebra, the tutor is by the nature of the medium bound to be implicit or tacit in the lessons given. The progress that results is much more like that described by Braine in the movement from rote nonproductive utterances, in formulaic pivot grammar, to a more productive use of the same constituents once the child has had an opportunity to master and then to extend the forms. By means of scaffolded use, the child learns what a form can do.

Vygotsky offers the hypothesis that mastery of a lower form has as its terminal state an increase in consciousness (or if you prefer, metacognition). He rather picturesquely characterizes this step across the Zone of Proximal Development as a "loan of consciousness" by the adult to the child until the time when the child can manage on his own. It is done not only by arranging the world suitably, but by providing "hints" and "props." Now, to the degree to which adult and child can stay within an informative but undemanding format, the hinting and the propping will be assimilable. And it is for this reason that I have made so much of the role of formats as essential aids to assisted learning.

Finally, to revert to the argument of writers like Peirce (1931–59), Benveniste (1971), and Jakobson (1971–79) about the 'intersubjectivity" of linguistic forms. Peirce commented particularly on the duality of symbolic forms in natural language. They serve both to *represent* concepts and to *communicate* them, he says. This creates complexities, since one's own perspective differs from the perspective of an interlocutor. It was Benveniste who noted the resort to shifters as universal means of dealing with problems of perspective. The credit goes to Jakobson, finally, for exploring the interconnections of pronominal shifters in such contrastive deictic pairs as *this* and *that, here* and *there, to* and *from*, and even verb forms like *come* and *go*.

The message that I read into the writings of these towering linguists is that it would be impossible to learn a language without knowing in advance or learning concurrently the perspectival complexities involved in using the same set of symbols for representation and communication. That is why I am so reluctant to consider language acquisition to be either the virtuoso cracking of

a linguistic code, or the spinoff of ordinary cognitive development, or the gradual takeover of adult speech by the child through some impossible inductive *tour de force*. It is, rather, a subtle process by which adults artificially arrange the world so that the child can succeed culturally by doing what comes naturally, and with others similarly inclined.

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