

Language and Acquisition in Chomskian Theory

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If we accept the narrower definitions of language, then behaviour is lawful by definition; but this fact is of limited significance, since most of what the communicator does will simply not be considered linguistic, communicative behaviour (*vide* Chomsky: 1959, 30).

I—*Plato's Problem*.

In 1959 Chomsky's review of B.F. Skinner's *Verbal Behaviour* initiated a dramatic shift in linguistics by proposing a new theoretical framework in which to construe language. In rejecting Skinner's terminological framework on the grounds that it was question-begging and lacking in explanatory force, Chomsky began to confront what he saw as the central problem in language theory — something he calls Plato's Problem: "how we can know what in fact we do know" (1980, 180). Plato's Problem encompasses several distinct arguments,¹ the most renowned likely being the Poverty of the Stimulus argument which maintains that the particulars of a subject's knowledge of language cannot be accounted for by referring exclusively to environmental data and general principles of learning.

This gap is especially clear if one considers the nature of language and the manner in which linguistic ability develops in normal people. For instance, one intrinsic aspect of our language is known as the Creativity Principle: one can produce and understand an infinite number of novel, meaningful sentences with a finite resources.² Further, children acquiring language demonstrate a very particular pattern of mistakes which they (do not) make when acquiring language. Finally, linguistic abilities are all the more remarkable when one considers that normal children acquire language in such a short span of time (generally between 18 and 36 months) that it is often called the "language explosion." Viewed in this light, such developments may appear almost magical. Thus, Chomsky writes:

Although our cognitive systems surely reflect our experience in some manner, a careful specification of the properties of these systems on the one hand, and the experience that somehow led to their formation on the other, shows us that the two are separated by a considerable gap, in fact, a chasm (1986, xxv).

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“Plato's problem, then,” Chomsky clarifies, “is to explain how we know so much, given that the evidence available to us is so sparse” (1986, xxvii). To foreshadow a bit, and to explain why Chomsky's new theory revolutionized traditional behaviourist psychology, Chomsky answers Plato's Problem by postulating an innate structure within the black box of the mind – an innate faculty that is necessary for the acquisition of language.

For Chomsky, there are both theoretical and empirical reasons justifying the claim that there must be an innate language faculty, and that it is impossible to answer Plato's Problem without such a nativist account. Empirically, the observation of both the universality and universals of human language are taken as evidence supporting the nativist theory. Two main elements combine to give significance to the observation of language universals: universality, the fact that language is a universal human phenomenon; and universals, the fact that all human languages putatively share some fundamental similarities. The discovery that symbolic, grammatical language is universal amongst all normal humans, in all of their diverse and separate cultures is remarkable, especially as some linguistic tribes have been isolated from the “civilized” world for eons.³ Pinker writes:

The universality of complex language [amongst humans] is a discovery that fills linguists with awe, and is the first reason to suspect that language is not just any cultural invention but the product of a special human instinct (26).

The second element of the observation of language universals claims that the grammatical structure of all natural languages differ from one another in remarkably standard, predictable ways – ways which reflect a fundamental similarity when viewed at a certain level of abstraction. Again, Pinker writes: “One of the most intriguing discoveries of modern linguistics is that there appears to be a common anatomy in all phrases [i.e., grammatical (phrase) structures] in all of the world's languages” (106). These observations combined answer Plato's Problem by empirically suggesting not only that language is innate or instinctive, but also by suggesting the content and properties of that innate language (via the universals). By this account, language is not something that is learned, rather it is something that “grows in the mind” (Chomsky: 1980, 134).

Chomsky's theory has inspired a vast amount of research in the

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sciences devoted to the structural study of languages and the development of language in children. It is to those scientists, psychologists, and linguists that the present paper is addressed. Steven Pinker, for instance, who specializes in language acquisition, has recently offered an argument for the existence of an “innate language instinct” (30) in his *The Language Instinct* (1994) – an argument he presents as exclusively empirical. Therein, he describes Chomsky’s theory as “a set of discoveries about the design of language that can be appreciated intuitively if one first understands the problems to which the theory is designed to provide solutions” (104). This essay takes Pinker’s remark seriously, and aims to situate those discoveries and their theoretical context in such a way as to make the odd seem more obvious. By examining the significance of those aspects of language structure not accounted for by the Chomskian theory, I hope to convince the Chomskian scientist that such features must be considered if one wishes to tell a complete, and accurate story about language acquisition.

The questions motivating the present endeavour are twofold: What are the conditions necessary for language development? and Does the Chomskian framework capture all of the conditions sufficient for language acquisition? In answering these questions, this paper will investigate the theoretical framework in which observations of language’s grammatical universals have the weight that theorists like Chomsky and Pinker give them. The validity of those observations will not be challenged.⁴ Rather, while attempting to work within the basic Chomskian framework, the overall significance of the universals standardly identified by Chomsky will be questioned. By noting the existence of other language features necessary for the acquisition of language, questions will be raised concerning why Chomskian language theory fails to recognize the significance of such factors. Further, Chomsky’s claims regarding the modularity of LAD will be challenged in light of the additional cognitive systems or abilities that the subject must possess in order to develop a functional grasp of language. Finally, a role will be suggested by which the universals conspicuously missing from a Chomskian account of language (acquisition) could be incorporated into a more effective model.

II – *Chomsky’s Answer to Plato’s Problem.*

Returning to Plato’s Problem, then, Chomsky writes, “The problem, then, is to determine the innate endowment that serves to bridge the gap between experience and knowledge attained...” (1986, xxv-xxvi). From a

Chomskian perspective, the only way to successfully answer the theoretical question “What is necessary for the acquisition of language?” is to transform it into the empirical question “What are the innate systems in the agent required for the acquisition of language?” Ironically though, Chomsky claims that “These are not topics for speculation or *a priori* reasoning, but for empirical inquiry” (1986, 4).

The solution, then, to Plato’s Problem, as proposed by Chomsky, is that language is in some form innate. In fact, it is embodied by a module unique to the human brain called the Language Acquisition Device [LAD]. But, the language that is innate is not any language in the usual sense. Rather, it is an abstraction comprised, as we shall see, from grammatical universals seen as common to all human languages. For now, though, the important observation is this: According to the theory, the only way to explain the acquisition of language is by making reference to LAD, for without such an innate language faculty, it is impossible for a subject to acquire language.

III – *The Proper Object of Linguistics.*

Yet, before considering the process of acquisition, let us first consider exactly what it is that is being acquired. There are two reasons to analyse Chomsky’s conception of language (as a proper object of scientific investigation) before examining the details of LAD. First, it helps one to properly appreciate how Chomsky’s solution to Plato’s Problem changed linguistics to its very core. Second, when we come to consider those items Chomsky isolates as the structural universals of language we will note conspicuous omissions that can only be explained by referring back to the Chomskian picture of language itself. Again, the picture of language that Chomsky generates is a direct result of the manner in which he construes the central nature of Plato’s Problem.⁵

Normally, we use the term “language” to indicate natural languages such as French, German, and English etc. Chomsky calls such languages external, E-languages (defined as a “construct understood independently of the properties of the mind/brain” (1986, 20)) and admits that they were the usual object of study in traditional linguistics (1986, 25). Yet, for Chomsky, natural languages are not natural kinds; they do not have the categorical integrity to withstand the rigour of scientific investigation. Chomsky writes, “Such informal notions as Swedish-vs.-Danish, norms and conventions, or misuse of language are generally unproblematic under conditions of normal usage.... But they can hardly be expected to enter into attempts to reach theoretical under-

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standing" (1993, 20). Natural languages change, they have a variety of dialects, and these dialects are often impossibly intertwined with neighbouring languages. "The problem," then, "is not one of vagueness; rather, of hopeless underspecification" (Chomsky: 1993, 19). In fact, Chomsky concludes that "languages in this sense [E-languages] are not real-world objects but are artificial, somewhat arbitrary, and perhaps not very interesting constructs" (1986, 26).

In contrast, Chomsky proposes the notion of I-language – "the 'I' standing for individual, internal, and intensional" (Green & Vervaeke: 1997, 151; *vide* Chomsky: 1997, 119). "I-language," Chomsky clarifies, "...is some element of the mind of the person who knows the language" (1986, 22). That is, I-language is the language innately embodied in the LAD of each person's mind.

This picture of language has several important theoretical implications. Firstly, the process of language acquisition is explained in terms of a change in brain states (of LAD) in an individual given the right stimulus. Chomsky writes, "Given appropriate experience, this [LAD] faculty passes from the state S_0 to some relatively stable steady state S_s , which then undergoes only peripheral modification (say, acquiring new vocabulary items)" (1986, 25). Also, this framework equates knowing a language with being in some mind/brain state – particularly a state of LAD (1986, 3; 22). Thus, a person's "knowledge" of a language (something Chomsky calls *competence*) is categorically distinguished from their linguistic abilities (*performance*) for purely theoretical reasons: 1) so that language can be studied scientifically; and 2) because without I-language it is impossible for an agent to acquire E-language.

These theoretical consequences of Chomsky's picture of language also have a significant impact on methodology. Chomsky writes, "Linguistics, conceived as the study of I-language and S_0 [the initial state of LAD], becomes part of psychology, ultimately biology" (1986, 27). Yet, if one accepts this claim, the question arises: How is the I-language to be studied outside of anatomy labs? For Chomsky, the answer is cognitive science. Cognitive science provides a theoretical framework which can effectively direct the relatively young science of brain research by postulating innate faculties, organs, and mechanisms with specific properties which one should expect to locate in a complete mapping of the brain's anatomy. Thus, by knowing the anatomy of a language, we can know the anatomy of the brain (or LAD). What, then, are the properties of LAD that can be theoretically determined? The short answer is: grammar.

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IV – *Universal Grammar.*

The language faculty has a definitive structure called Universal Grammar [UG]. Chomsky writes,

UG may be regarded as a characterization of the genetically determined language faculty. One may think of this faculty as a 'language acquisition device,' an innate component of the human mind that yields a particular language through interaction with presented experience, a device that converts experience into a system of knowledge attained: knowledge of one or another language (1986, 3).

More specifically, "UG is a theory of the 'initial state' of the language faculty, prior to any linguistic experience" (1986, 3). UG postulates that LAD will have properties directly related to the structural universals of all human languages. Why? According to the theory, UG is the cause of those universals, and determines the domain and variation of all human languages. Thus, Pinker defines Universal Grammar as: "The basic design underlying the grammars of all human languages; [it] also refers to the circuitry in children's brains that allows them to learn the grammar of their parent's language" (483).

But, why grammar? Why is grammar such a central notion to human language? The answer to this question lies in the very manner that Chomsky construes the mystery of Plato's Problem. First, the workings of syntax is a characteristic of language that could not have been learned.

Grammar offers a clear refutation of the empiricist doctrine that there is nothing in the mind that was not first in the senses... The details of syntax have figured prominently in the history of psychology, because they are a case where complexity in the mind is not caused by learning; learning is caused by complexity in the mind (Pinker, 124-125).

Further, given what we already know about all human languages (i.e., the Creative Principle mentioned above), it follows that language is essentially grammatical. Since languages must be able to create an infinitude of novel formations with finite resources, UG *must* be a "discrete combinatorial system" (Pinker, 84) – a set of recursive rules governing the production of well-formed (grammatical) sentences. For this reason,

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Chomsky calls UG a “generative grammar” saying that,

The generative grammar of a particular language... is a theory that is concerned with the form and meaning of expressions of this language.... Its standpoint is that of individual psychology. It is concerned with those aspects of form and meaning that are determined by the ‘language faculty,’ which is understood to be a particular component of the human mind (1986, 3).

“In short,” Chomsky continues, “the language faculty appears to be, at its core, a computational system that is rich and narrowly constrained in structure and rigid in its essential operations....” (1986, 43). In the final case, then, the Chomskian framework promises to reduce the vast complexity of human language into a small, comprehensive set of super-rules (called principles) that specify the essential nature of language (I-language) and the necessary properties of UG.

Having fixed the notion of language with which Chomskian theory works, we can now consider the fairly simple story of language acquisition that results. A basic version of this story is found in Chomsky’s general theory of principles and parameters. Starting with a remark about the super-rule principles that constitute the S_0 of LAD Pinker writes:

In fact, the super-rule is beginning to look less like an exact blueprint [rather description] for a particular phrase and more like a general guideline or principle for what phrases *must* look like. The principle is usable only after you combine it with a language’s particular setting for the order parameter. This general conception of grammar, first proposed by Chomsky, is called the ‘principles and parameters’ theory.

Chomsky suggests that the unordered super-rules (principles) are universal and innate, and that when children learn a particular language, they do not have to learn a long list of rules, because they were born knowing the super-rules.... [In this way h]uge chunks of grammar are then available to the child, all at once, as if the child were merely flipping a switch to one of two possible positions. If this theory of language learning is true, it would help solve the mystery of how children’s grammar explodes into adult-like complexity in so short a time. They are

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not acquiring dozens or hundreds of rules; they are just setting a few mental switches (Pinker, 111-112; italics added).

V – Signs and Stimulus Generalization

The magnitude of the failure of this attempt to account for verbal behaviour serves as a kind of measure of the importance of the factors omitted from consideration, and an indication of how little is really known about this remarkably complex phenomenon (Chomsky: 1959, 28).

I began this investigation by considering whether the Chomskian paradigm provided a theory that sufficiently answers Plato's Problem by specifying all the necessary elements to allow for the acquisition of language. While Chomsky's principles and parameters theory of UG, appears to go a great deal towards providing a substantial explanation of language acquisition, some abilities, necessary for the acquisition of language (competence), remain unaccounted for in the theory of UG.

To begin with, consider the following: All languages are composed of signs which constitute part of the (E-)language stimulus. This raises a crucial question that Chomsky's picture fails to explicitly address. What allows a phoneme or grapheme to be a phenomenon at all, let alone a linguistic one? As Chomsky claims, all performance languages (E-languages) are composed of linguistic units (either verbal or written). Generally, such units are called signs. Yet, consider a paragraph in which each sentence is handwritten by a different author. This paragraph represents a vast spectrum of handwriting which, in spite of its variety, is legible by any literate English-speaker. The same problem holds when one considers spoken language. People speak with a vast range of unique accents and in numerous dialects. But, in light of Chomsky's general argument regarding the Poverty of the Stimulus, some kind of story must be provided to explain the manner (or mechanism) by which the subject recognizes that scrawl (or drawl, take your pick) for the signs they are.

Importantly, regardless of how Chomskians wish to decompose the stimulus into smaller and smaller syntactical units (from sentences to phrases, phrases to words, words to phonemes (sounds) or graphemes (letters or pictograms), some account must be given explaining how we recognize these as meaningful symbolic units and not as meaningless marks. In other words, a further reduction of the sign does not explain how it is recognized. Importantly, this same question

returns at the macrocosmic level. How do we distinguish linguistic (communicative) behaviour from non-linguistic behaviour in a manner that is neither dogmatic nor question-begging? At this point, some of the very arguments (particularly the Degeneracy of the Data) that Chomsky used to substantiate the necessity of an internal, innate faculty return – unexplained. If we are to accept Chomsky's picture we are due some story answering the Question of the Microcosm: How does the subject reliably recognize individual "symbolic" units across the scope of their variety? And the Macrocosm: How does the subject reliably discriminate between linguistic, communicative behaviour and non-linguistic, non-communicative behaviour?

While no one has proposed this (possibly for reasons we will see below), the simplest answer would claim that this type of stimulus recognition is part and parcel of LAD. To retain the single module thesis one must claim that stimulus identification is one of the functions of LAD. To give up the single module thesis is to admit that UG does not cover all the necessary (innate) abilities of the subject acquiring language. In either case, the question of why the Chomskian paradigm is exclusively focused on grammatical universals remains.

In fact, though, the simplest answer does not suffice. In general, cognitive psychologists conclude that humans must be extremely adept at pattern recognition and stimulus generalization to perform the types of tasks that we do. But, the tasks requiring stimulus generalization and pattern recognition are not exclusively linguistic. While psychologists still cannot completely account for our stimulus generalization and pattern recognition abilities (the going theory postulates a combination of top-down and bottom-up processes; *vide* Reed, 13-38), they play an integral role in the recognition of everything from object permanence to objects, to faces, to noises, calls and other sounds. Pattern recognition tasks bridge all five of the senses, and seem such a fundamentally basic element of so much of our behaviour that they might simply be called the recognition of identity. Further, the activities supported by this ability are shared by both human and non-human animals alike, regardless of whether they possess language. Thus, while being a necessary prerequisite for the generation of language, it cannot be part of Chomsky's modular LAD. Here, then, is the first universal, necessary for the development of language (even in a Chomskian sense) that is simply unaccounted for by the theory of Universal Grammar.

VI – *Non-Grammatical Language Structure.*

Nor does the list end here. The following list observes some additional properties of human language, extending beyond those enumerated

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within the Chomskian paradigm. Beyond the claim that these items are significant elements of the structure of language, I submit that these elements are, like phrase structure, "tracked" by language users, thus constituting an additional liability to the finite mental resources of the linguistic agent. Some of the items on this list are documented, and some are merely speculative.

Regarding spoken language:

- 1) All spoken language is accompanied by gestures, including facial expressions.
- 2) Volume and tone and rate of speech are of linguistic importance, and contribute to sentence meaning. (These elements help determine the speaker's emotional attitude, i.e., sarcastic, enraged, sympathetic, ironic, etc.).
- 3) Personal contact (touching and/or eye contact) is of linguistic importance in communication.
- 4) Distance between speakers in conversation is of linguistic importance.

Regarding language in general:

- 5) Linguistic signs are standardly used in a manner that is consistent over time. That is to say, people do not adopt a "Humpty-Dumpty" attitude⁶ towards language, changing their meaning from one usage to the next. (This important universal is in fact mentioned by Pinker when he cites the 1960 research of C.F. Hockett as follows: "Words have stable meanings, linked to them by arbitrary convention" (237).
- 6) The speaker's social/power relation to the hearer governs interpretation and sentence meaning in a manner that supercedes its grammatical, semantic content. (i.e., When the president says, "Gerry, would you like to call the Chief of Staff for me please?" he is not asking a question, and he doesn't care about Gerry's feelings (about calling the Chief of Staff) whatsoever. The president is simply being polite.)
- 7) Not only do humans track phrase structure, we also track tempo (rhythm), rhyme, and repetition (of sentences, phrases, words, or even phonemes), in both written and spoken language.

In many respects, this is simply an *ad hoc* "laundry list" created to demonstrate the range of linguistic properties omitted from a Chomskian account. While some items simply represent features that contribute to an understanding of language in the usual sense, others, like (5) are necessary for the acquisition of language even by a

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Chomskian account. (That is, it is part of the definition of a sign that it have a fixed (or at least stable) use.) The question which now deserves a more proper answer is: Why are these characteristics not included in Chomsky's picture?

The answer, for any structuralist, is obvious. In Saussurian terms, the features of language cited above do not pertain to *langue* (language systems), but rather to *parole* (speech acts). Chomsky takes great measures to respect this distinction through his two notions of *competence* and *performance*. Take the case of gestures, for instance. Chomsky readily admits that

anybody who's observing ... [my] gestures would notice that they relate in all sorts of ways to the form and content of my utterance. For example, I stress something by a gesture, but even the phrasing – the intonation structure of the utterance – corresponds in quite obvious ways to things going on in the gestural system. They're in tandem, and some common source is obviously controlling them both; they're just too well correlated for anything else to be the case. Nevertheless, the system of gestures is very different in its underlying principles from the system of language (1983, 40).

How is the system of gestures different from the system of language? It is not just the pragmatic character of gestures that relegates them to *performance*. After all, grammatical utterances also have a pragmatic character. Rather (and more to the point), it is that gestures do not have a formal grammar. Yet, if the gestures accompanying our utterances did have some kind of formal grammar⁷ Chomsky would oblige himself to give an account of them in terms of UG (thus his account of sign language or non-vocal speech). So, the real question, as has been asked already in the paper, is: Why grammar?

VII – *The Puzzles of Semantics and Pragmatics.*

The skeptical answer suggested by Taylor (1992) is that Chomsky has metaphysical reasons. Given his ideas about the nature of language, thought, and what the communicative process entails, Chomsky feels that the particularly generative structure of grammar must be given a nativist explanation. Or, in more friendly terms, in light of Plato's Problem, and the Poverty of the Stimulus, what cannot be explained is a

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child's grasp of grammar.

Yet, Bruner, in his (1983) *Child's Talk*, observes other elements of language that are just as puzzling as the child's acquisition of syntax for which Chomskian language theory provides no account. Consider the types of mistakes children (don't) make when co-ordinating *significant* and *signifié*. The puzzle, which Bruner calls the "Wittgensteinian dilemma ('What feature of the referent does a label refer to?)" (81), is this: When the priest baptizes the child "John," how does the congregation realize that it is the child that is "John" and not his head, his clothing, the water, the action, the relationship...? How is one even sure that it is an act of naming and not one of exclamation? Yet, the normal child learning language does not mistake "doggie" for doggie's collar, doggie's colour, doggie's actions or anything of the sort (Bruner, 81). Similar problems and results arise when identifying the very acts of (proto)indication (or declaration). Considerations such as these led Bruner to conclude, "Logically, there would be no conceivable way for two human beings to achieve shared reference were there no initial disposition for it" (122). Further, Bruner concludes that a grasp of semantics is actually attained by the mastery of an elaborate, subtle pragmatic routine (chapter 4, 67-88) (or *format* (120; 122-124)). The child's success in mastering a *format*⁸ depends on, amongst other things, their sensitivity to such aspects of language as (1) through (3) above. As Bruner writes,

reference is dependent... not only upon mastering a relationship between sign and significate, but upon using social procedures in concert with one another to assure that the sign and the significate [referent] that become linked [for the individual] overlap in some negotiable way with the uses of others (88).

Thus, one cannot explain the process of semantics acquisition without uniting it to the pragmatic context(s) in which the acquisition process occurs. Also, Bruner notes that a child's natural felicity with pragmatics demonstrates an explanatory puzzle similar to their mastery of grammar. In addition to the child's natural "attunedness," which Bruner specifies as their Initial Cognitive Endowment (24-31)⁹ the child acquires pragmatics in a very definite manner which demonstrates a unique pattern of errors and abilities to go "beyond the information given". For

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instance, citing the work of Roger Brown, Bruner writes:

he [Brown] found that Adam's mother used the interrogative in two quite different ways, one as a request for action, the other as a request for information: 'Why don't you ... (e.g., play with your ball now?)' and 'Why are you playing with your ball?' Although Adam answered informational *why* questions with *because*, there was no instance of his ever confusing an action and an information-seeking *why* question. He evidently recognized the differing intent of the two forms of utterance quite adequately from the start (37).

From this Bruner concludes that Adam "must have been learning speech acts rather than simply the *why* interrogative form" (37). Thus, Bruner encourages the psycho-linguist, "Let us not be dazzled by the grammarian's questions. Pragmatic ones are just as dazzling and just as mysterious" (120). The fact that other elements of language appear to present problems of similar character (if not magnitude) to the grammatical form of Plato's Problem have led skeptics to offer other, less understanding, speculations into why the Chomskian picture simply fails to recognize, let alone address these issues as related.

For instance, another answer to the "Why grammar?" question observes that by focussing on language characterized as essentially grammatical Chomskian linguistics can preserve a discontinuity between language and protolanguage (recall note 7, above). Green and Vervaeke write that "Protolanguage contains many of the concrete words of modern language... but few of the function words (i.e., the, to, by, of, etc.). These [function] words are crucial to making a language operate" (158). "Indeed," they continue, "protolanguage seems to pop up everywhere that someone is communicating but does not have the grammatical resources to use full-blown language" (*ibid*). For instance, "Children who are beyond the single-word stage, into the multi-word stages (ages 18-30 months, roughly) seem to speak protolanguage" (*ibid*). Yet, what is achieved by rigidly maintaining this distinction? Surely, there are some remarkable and unique features that make a language grammatical. And, a grammatical language can do many things that a proto-grammatical language cannot. But, if people who do not (yet) possess grammar are communicating, why should the focus of linguistic research be only on those who have grammar? Especially because it seems that the essential nature of language (defined as a vehicle of communication) is no longer grammatical but pragmatic. After all, the trig-

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gering of LAD is itself a communicative act. Perhaps Chomsky's focus on grammar can only be explained by his claim that grammar is the only thing that can be explained. "It is important," he wrote in *Rules and Representations*,

to bear in mind the fundamental conceptual distinction between generation of sentences by grammar, on the one hand, and production and interpretation of sentences by the speaker, making use of the resources of grammar and much else, on the other.... The study of grammar raises problems that we have some hope of solving; the creative use of language is a mystery that eludes our intellectual grasp" (1980, 222).

VIII – *Pragmatics and the Nature of the Language Stimulus.*

Whatever the reason, Chomsky's continual avoidance of incorporating the pragmatic dimensions of language into his theory is especially confusing in light of remarks which seem to recognize their integral character. Again in *Rules and Representations*, Chomsky wrote that "the person who knows a language knows the conditions under which it is appropriate to use a sentence, [and] knows what purposes can be furthered by appropriate use of a sentence under given social conditions" (1980, 224). While such a claim seems incongruent to his exclusively grammatical, reductionist account of language knowledge in *Knowledge of Language* (above), it also seems to capture what we commonly mean when we use the words "knowing" or "understanding" a language. In the end, it would seem that it is precisely because theorists like Bruner consider language in its more usual sense that they are led to conclude that,

These three facets of language that the child must master in order to become a 'native speaker'—the languages syntax, semantics, and pragmatics—are obviously not and logically could not be learned independently of each other.... The three aspects seem to be learned interdependently as one actually observes the process in real life (18).

Accepting the need to somehow incorporate the pragmatic into our picture of language, what role could it play in acquisition theory? Here, Bruner again offers a helpful, if not elegant suggestion.

The classic Chomskian paradigm states that language learners require UG and some kind of environmental stimulus to trigger the activation of LAD by the "setting of a few simple switches." Besides the cru-

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cial window of opportunity in which such a stimulus must occur, the most important observation regarding this stimulus (one that is reiterated *ad nauseam* by Chomskians) is the fact that this stimulus need not in fact be grammatically correct language. (Thus the significance Chomskians place on the emergence of Creoles from pidgins in the span of a single generation (Pinker, 32-39)).

Yet, it is clear that not just any stimulus will suffice, even if it is presented at the correct time. The first thing to note is that children cannot simply be presented with grammatically correct text and be expected to acquire language. If this were so, then there would be no dead languages in the world and Linear Minoan A, for instance, would be comprehensible. Yet, one might counter, this is merely because reading is an additional skill, separate from, but parasitic upon the language ability. (After all, not all linguistic cultures have writing). So, consider instead the effectiveness of a "book reading machine" as a stimulus to trigger LAD. While the "book reading machine" does use terms consistently (thus conforming to universal (5)), it eliminates all pragmatic characteristics of language like intonation, gesture, eye contact. While it would actually be inhuman to attempt to test such a prediction on human subjects, there are good theoretical reasons to suggest no person could acquire a functional language from such a stimulus. Firstly, (proper) names would never find their referent in the child's mind. *Significant*, *signifié* and *significate* could never be unified! In fact, it is not even obvious that such a child could distinguish the various parts of speech, for as Pinker observes, not all languages are Subject-Verb-Object. Some are SOV, others are VOS, and others still are VOS or OVS (Pinker, 234). It is doubtful that a child exposed to such a stimulus could arrive at any language ability whatsoever. Even if their LAD's were triggered by such a stimulus, it would be impossible for their language to be co-ordinated with the activities of life. Clearly, any linguistic understanding that the child could derive from such a stimulus would be significantly impoverished.

Even if the child could acquire language competence in this way, such competence would only characterize abstractly "the ability of one who has mastered the language to distinguish sentences from non sentences..." (Chomsky: 1959, 56). Yet these sentences would be entirely without content or sense. The entire function of language would be lost. Surely such an ability would be neither of value nor of interest to the child. The performative acts of "language," so construed would be, at best, a binary game of *, not-*. A child having acquired such a language

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would not even be able to distinguish sense from nonsense.

Thus, for language to work, it must not only be fixed in the mind, it must be fixed in the world. This fact raises the question of exactly how the "language stimulus" must embody the pragmatic dimensions of language. Thus, Bruner proposes a Language Acquisition Support System [LASS], to capture the characteristic and necessary features of the pragmatic contexts in which the child acquires language. He writes:

Language is not encountered willy-nilly by the child; it is shaped to make communicative interaction effective—fine-tuned. If there is a Language Acquisition Device, the input to it is not a shower of spoken language but a highly interactive affair shaped... by some sort of and adult Language Acquisition Support System (38).

Language is not something that is "triggered," or acquired by the "setting of a few simple switches in the mind," rather it is the product of an involved developmental process. Given the above analysis, it seems plausible that, in a manner similar to that in which Chomsky was able to isolate the necessary grammatical properties of LAD, one ought to be able to specify the necessary pragmatic properties of the language stimulus, LASS. In addition to specifying the details of the structured, inter-individual routines (*formats*) that permit language acquisition, such a framework is able to account for the functional role of the pragmatic characteristics of language (like those listed above) in the acquisition model.

In this latter respect, one might consider the importance of Grice's normative *Cooperative Principle*. There is good reason to believe that if Grice's principles of quality, quantity, relation, and manner did not standardly obtain in the communicative situation, language acquisition would be significantly complicated. If equivocation were the standard state of affairs, it is not clear that any degree of imbedded grammatical knowledge could help a child acquire language. (If people were generally radically equivocal then there is no situation in which we could say that they are "misusing" a word.) Similarly, if people only randomly spoke truths, or only randomly made relevant utterances, then it is difficult to imagine how a child could ever acquire a language that

succeeded in the task of communication.

IX – *Language Theory.*

In light of the argument provided herein, it is exceedingly difficult to accept claims like the following: Generative grammar, "in fact,...is not a theory any more than chemistry is a theory. Generative grammar is a topic which one may or may not choose to study" (1986, 4), which suggest that Chomskian language theory is purely empirical and is justified on exclusively scientific grounds. I have argued in this paper that there is significantly more to Plato's Problem than realized by Chomskian language theory. Sign recognition, reference realization, and pragmatic felicity all present problems similar to the grammatical Poverty of the Stimulus, in the sense that the language learner must, to use Bruner's term, go "beyond the information given." Also, there are several language universals that are not given adequate consideration in the Chomskian theory of language and language acquisition. Some of these universals, i.e., pattern recognition and Bruner's "Innate Cognitive Endowment," are postulated as resources that the language learner *must* possess. Yet, while necessary for the acquisition of language, they do not relate to the specifically grammatical character of language. Since these abilities are involved in mental functions that are not exclusively linguistic, their presence challenges the unique modularity of Chomsky's Language Acquisition Device, and its exclusive role in language acquisition.

Other universals not incorporated into the Chomskian model of language do not indicate additional features of the language-learner's cognitive architecture. Instead they are pragmatic features of language which represent the necessary characteristics of LASS, the "language stimulus," which triggers the development of "communication capable" language in an individual. The features of LASS indicate that language acquisition is far more a developmental process than standardly believed in Chomskian theory. Further, such a developmental perspective promises, at the very least, to explain far more than a grasp of grammar, while establishing that *performance* actually can be studied scientifically.

In fact, a proper appreciation of the significance of the essentially pragmatic nature of language, reveals that Chomsky's naturalistic, reductionistic notion of language cannot be made sense of. Chomskian theory defines language as exclusively internal and individual, and knowledge of language exclusively in terms of the mental/brain states of individual speakers. Yet, when the fundamental characteristics of the

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"language stimulus," construed as LASS, are fully considered, one realizes a central principle of language in general: If it is to be a house of meaning and a vehicle of communication, language must be fixed not only in the mind of the individual, but in the world.

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Endnotes

1. Briefly, the usual arguments are as follows:

- 1) the Creativity Argument (mentioned below, p.1);
- 2) the Logical Argument (some rules of grammar could not be learned by induction even given pure input);
- 3) the Poverty of the Stimulus (language learners are not exposed to quantitatively sufficient input);
- 4) the Degeneracy of the Data (language learners are not exposed to qualitative, pure input);
- 5) the Argument From Universals (all human languages share certain structural universals when considered at a suitable level of abstraction). (Shanker, lectures, 1996)

2. The finite resources are both the mental resources of the subject and the number of elemental units.

3. Pinker writes of New Guinea highland tribes numbering a million people, isolated for over 40,000 years, and unknown to the outside world until the middle decades of the 20th century (25-26). Yet, collectively, these tribes possessed over 800 different languages (and bows and arrows).

4. This is not to say that the grammatical universals identified within a Chomskian framework are not contestable (if not tenuous). Tonasello, in his (1995) review of Pinker's *The language Instinct* cites evidence which significantly challenges the claim that Chomskian grammatical theory actually captures the structure of all languages.

5. For a complete consideration of this remark, please see Taylor's (1992) *Mutual Misunderstanding*. The thesis he presents is, briefly, this: Language theorists take up an attitude regarding two questions, what constitutes communicational understanding, and whether it standardly obtains between communicators. Given this framework, theorists are logically compelled to create a certain picture of how communicational understanding *must* occur.

6. "When I use a word," Humpty Dumpty said, in a rather scornful tone, 'it means just what I choose it to mean — neither more nor less'" (Lewis Carroll, 169).

7. It is not precisely clear what would constitute a suitable criteria for such a formal grammar of gesture. Clearly there are extremes, as in AS.L. Thus, such a criteria might involve, for instance, saying that there are well-formed gestures, or justifiably claiming that one is mis-using a gesture because of the place it is given in some speech act. But gestures can be used "inappropriately," as in cases of people who send "mixed messages" whereby their gestures, or tone, do not conform to the semantic content of their utterance. The real question is: Is there a continuum here or not?

8. Bruner defines *format* as follows: "A principal vehicle of the Language Acquisition Support System is what we have called a *format*. A format is a standardized, initially microcosmic interaction pattern between an adult and an infant that contains demarcated roles that eventually become reversible. They become...such familiar routines in the child's interaction with the social world that they are deserving of James Joyce's term, 'epiphanies of the ordinary'" (120-121).

9. Bruner specifies four aspects of the Initial Cognitive Endowment "(a) means-ends readiness; (b) a sensitivity to transactional enterprises; (c) systematicity in organizing experience; and (d) abstractness in rule formation" (119).