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An Interview with Noam Chomsky

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An interview with Noam Chomsky

Noted linguist Noam Chomsky shares his thoughts about language, language development, and reading.

L. PUTNAM: *Dr. Chomsky, many classroom teachers are unfamiliar with your work, because the study of linguistics is not required in their professional training. It would be helpful and would arouse some interest in this field if you answered some of the following questions. Your 1957 publication entitled *Syntactic Structures* presented a completely new way of looking at language. What was it that started you on this exploration?*

N. CHOMSKY: One may be interested in language for many different reasons, and from many different points of view. My own interest has been dominated by several central questions: (1) What is it that we know, when we know a language? (2) How is this knowledge acquired? (3) How is this knowledge put to use? (4) What is the physical basis, in neural mechanisms, for the systems of knowledge and use of language? The fourth question remains on the horizons of research. Let us keep, then, to the first three.

In the early 1950s, typical answers to these questions would have been something like this: (1) A language is a certain system of

habits and skills; to know a language is to have mastered these skills. (2) Knowledge of language is acquired by such mechanisms as conditioning, association, practice in exercising skills, etc. (3) Use of language is exercise of the skills that have been mastered. Within psychology, the dominant assumptions were structuralist. As a theoretical discipline, linguistics was devoted to devising principles of analysis that could be used to provide an organized and systematic account of the elements of a language, their relations, the orders in which they appear, the way they are grouped into larger elements, and so on.

It seemed to me clear that these approaches were entirely inadequate, in fact, that the entire conception was completely wrong. Normal use of language is not an exercise of any habit or skill. Typically, use of language is creative, in the sense that it constantly involves the production and interpretation of new forms, new in the experience of the language user or even in the history of the language. This is not an exotic phenomenon, but rather the norm. Thus readers of these sentences may not have seen any of them before, or anything like them, yet they have no difficulty recognizing them as sentences of their language and assigning them a specific meaning. They do this in the same way as other speakers of [similar varieties of] English. If these sentences were modified in some arbitrary way—say, in reverse order—they would be equally novel for the reader, but they would be gibberish. It is easy to show that speakers of a language, even young

children, assign specific and precise meanings to very simple sentences that are entirely new in their experience.

Consider, for example, the following sentences, to illustrate what is in fact the norm in language use:

1. We expect to like each other.
2. John wonders who [we expect to like each other].
3. John is too clever to catch Bill.
4. John is too clever to expect anyone to catch Bill.
5. John is too clever to catch.
6. John is too clever to expect anyone to catch.
7. John is too clever to meet anyone who caught.

In case 1, we know that the sentence means, roughly, that each of us expects that we will like the others of us. In case 2, the very same sentence is embedded in the context "John wonders who—," yet we interpret it quite differently. The reciprocal phrase *each other* does not relate to *we*, but rather to the more remote phrase *who*. The meaning is something like: "John wonders which people are such that we expect that each of those people will like the others of those people." In example 3, we understand that John is to do the catching; in 4, John is to do the expecting. But in 5 and 6, which differ from 3 and 4 only by deletion of the final noun, the meaning is quite different: it is not John who is to do the catching and expecting, but someone else, maybe us; John is the person to be caught (to understand sentence 6 often takes a moment's reflection, whatever that means exactly). Sentence 7 appears to be of the same complexity and roughly the same form as 6, but it is complete gibberish, unless we understand *catch* quite differently, as in "he catches for the Yankees."

These are very short and simple sentences. We understand them in a precise and explicit way, even though they may be novel in our experience, and unlike others that we have learned (in fact, we typically have no idea what sentences we have heard, apart from conventional greetings and the like). Children are not instructed to interpret these sentences in the ways they do, nor are foreigners learning English. Examples such as these do not appear in grammar books or teaching texts, and would only confuse people if they did appear; in fact, the properties of these sentences were not even noticed until recently. The sentences seem familiar, but

that is not because we have come across others resembling them. In fact, inspection of actual texts would show that such constructions are quite rare.

Plainly, we cannot be carrying out these accomplishments by habit, and there is no mere skill involved. Our inability to associate *each other* with *we* in 2 is not a lack of ability; it is not that we haven't practiced enough, or that we are too weak, or that we should try harder. Furthermore, such examples show that no notion of analogy or similarity will be of any help at all in explaining the core properties of language. Thus the phrase given within brackets in 2 is identical with 1, and thus is surely analogous to it in any reasonable sense of analogy, but it is interpreted quite differently.

Such examples also show that the entire framework of behaviorist psychology is simply irrelevant to normal linguistic behavior, though to demonstrate this point, much simpler observations suffice, as they suffice to demonstrate the irrelevance of behaviorist doctrine to behavior generally, apart from its most peripheral aspects.

Attention to the facts shows that the answers to the three questions posed must be entirely different from those that were conventional at the time. Recognition of such facts as these in various domains, and ideas as to how to account for them, led to the cognitive turn in psychology in the mid-1950s, and to the development of generative grammar within linguistics, one primary factor in

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this cognitive revolution, as it is sometimes called. It seems that the right answers to the three questions are something like this: (1) to know a language is to have mastered a system

of rules and principles; (2) the child acquires this knowledge on the basis of a very rich biological endowment that determines, quite precisely, the kinds of systems that can develop in language growth; (3) use of language is rule-governed behavior. At the heart of language, and much of human action and thought, is a system of mental representations and computations. The goal of linguistics, then, is to discover these systems, and more deeply, to discover the fixed, invariant biological endowment that enables each child to develop a very rich and highly articulated system of knowledge on the basis of quite fragmentary and limited evidence.

These ideas were by no means entirely novel. In fact, they recall a rich tradition that had long been forgotten by the mid-1950s, and is still little known.

L.P.: *For those of us who are not linguists, how would you state the basic idea of your generative transformational theory?*

N.C.: The basic idea is that knowledge of language involves a system of rules and representations, of mental computation, linked to the motor and perceptual apparatus; and that much of this system is fixed and invariant, just as the essential form and organization of the human body is fixed and invariant, determined by our biological endowment. To develop these ideas further would lead us to the principles that determine the form and meaning of sentences. Phenomena such as those illustrated above are common to the languages of the world, so far as we know. Notice that in all of these examples certain elements are missing in the physical form, but understood. Thus in 1 and 2 the subject of *like* is not expressed, but is understood; it is understood differently in the two cases. The same is true in the other examples.

The principles of language determine where these missing elements must appear, and how they must be understood. They are missing only in the sense that they are not pronounced: the mind "sees" them and uses them in its mental computations, and they are just as real as the elements *John, we, etc.*, which happen to be linked to the vocal apparatus in the system of mental computation.

Languages, of course, differ; English is not Japanese. But it seems that languages dif-

fer only in their lexical choices and in selection of certain options that are not fully determined by the fixed principles of our biological endowment. Thus in every language, verbs take objects; but the object may follow the verb, as in English, or precede it, as in Japanese. This option holds not only for verb phrases, but for all phrases. Thus English has prepositions, while Japanese has postpositions. Japanese in many ways seems a mirror image of English, and seems superficially to differ in many other respects as well. But the systems are cast to the same mold.

The same is true of other languages, so far as we know, however different they may seem superficially. Indeed, we know that this must be the case, or children would never be able to learn any of these languages. A language can be acquired, in all of its richness and complexity, because the child basically already "knows it," as part of its biological endowment. The same is true much more broadly, in every domain of human achievement.

L.P.: *You have written that a major contribution of the study of language is understanding the character of mental processes, i.e., "Language is a mirror of the mind." At the present point in your work, what important reflections are in this mirror?*

N.C.: The idea that language is a mirror of mind is a traditional one, which has received expression in various ways over the centuries. I have never felt that this metaphor should be taken too literally. Rather, it seems that language is one essential component of the human mind. The human brain is the most complex and intricate biological system we know. When we study its properties and manifestations, we are studying what we call "mind." The human mind appears to consist of different systems, each intricate and highly specialized, with interactions of a kind that are largely fixed by our biological endowment; in these respects it is like all other known biological systems, the physical organs of the body below the neck, for example. One of these systems is the human language faculty. It is particularly interesting because it is a common property of humans, with little if any variation apart from quite serious impairment, and it appears to be

unique to the human species; contrary to much mythology, other organisms appear to lack even the most rudimentary features of the human language faculty, a fact that has been shown quite dramatically in recent studies of apes. Thus human language appears to be a true “species property,” and one that enters in a central way into our thought and understanding. But it is not, in my view, a mirror of mind; rather, an essential component of the human mind, a crucial element of the human essence.

L.P.: *In Language and Mind (Chomsky, 1968), you wrote in essence that as research in grammar continues, we may expect boundaries that seem clear today to shift—to a new basis for organization of grammar. Now [in 1987], which, if any, have shifted?*

N.C.: There have been many changes in our conception of the nature of language over the past 30 years. Early work in generative grammar, as in my *Syntactic Structures* in 1957, was in some respects similar to traditional grammar. Specifically, it involved rules that were specific to particular constructions and to particular languages. Thus the rule for forming questions in English, or passives in English, was language-particular and construction-particular, just as in a traditional grammar there will be a chapter on passives, one on questions, and so on. The so-called rules of traditional grammars are really only hints, understandable to an intelligent reader who already knows the language, just as the rules in a teaching grammar presuppose that the learner already knows the basic structure of language.

Generative grammar, in contrast, attempted to make explicit what is presupposed—indeed, what was not even recognized to exist—in traditional and pedagogic grammar. But apart from this crucial distinction, the rule systems of early generative grammar had a rather familiar look to them. More recent work has led to the conclusion that the rules of traditional and early generative grammar are an artifact, not real elements of the mind/brain. There appear to be no construction-particular rules, but rather very general principles, such as the principles for interpreting missing elements, that are common to all languages and all constructions. Languages

differ in the manner indicated earlier, but not by selection of different rules. There is thus, in recent work, a very radical departure from the tradition of study of language over the past several thousand years.

L.P.: *Reading teachers are concerned with language acquisition since oral language provides a basis for reading. In your writing, you state that at birth, children are genetically programmed to acquire language and that it is innate. Is, then, the heavy emphasis placed on language development by nursery schools and kindergartens justified?*

N.C.: There is little doubt that the basic structure of language and the principles that determine the form and interpretation of sentences in any human language are in large part innate. But it does not follow that emphasis on language development is misplaced. If a child is placed in an impoverished environment, innate abilities simply will not develop, mature, and flourish. To take an extreme case, a child who wears a cast on its legs for too long will never learn to walk, and a child deprived of appropriate nutrition may undergo puberty only after a long delay, or

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never, though there is no doubt that walking and sexual maturation are innately determined biological properties. Similarly, a child brought up in an institution may have ample experience and nutrition, but still may not develop normally, either physically or mentally, if normal human interaction is lacking.

It is a traditional insight that teaching is not like filling a cup with water, but more like enabling a flower to grow in its own way; but it will not grow and flourish without proper care. Language development, like all human development, will be heavily determined by

the nature of the environment, and may be severely limited unless the environment is appropriate. A stimulating environment is required to enable natural curiosity, intelligence, and creativity to develop, and to enable our biological capacities to unfold. The fact that the course of development is largely internally determined does not mean that it will proceed without care, stimulation, and opportunity.

L.P.: *We realize that linguistics is the scientific study of language, and not a recipe for language instruction. If teachers in primary grades were familiar with your work, what kinds of changes or emphases might they make in reading instruction? What general suggestions would help them?*

N.C.: I'm hesitant even to suggest an answer to this question. Practitioners have to decide for themselves what is useful in the sciences, and what is not. As a linguist, I have no particular qualifications or knowledge that enables or entitles me to prescribe methods of language instruction. As a person, I have my own ideas on the topic, based on my own experience (in part, as a teacher of language to children), introspection, and personal judgment, but these should not be confused with some kind of professional expertise, presented from on high. My own feeling, for what it is worth, is that at any level, from nursery to graduate school, teaching is largely a matter of encouraging natural development. The best "method" of teaching is to make it clear that

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the subject is worth learning, and to allow the child's—or adult's—natural curiosity and interest in truth and understanding to mature and develop. That is about 90% of the prob-

lem, if not more. Methods of instruction may influence the residue.

L.P.: *Many of our early beliefs about the nature of language of disadvantaged children have been disproven by research, for example, that Black English is deficient or inferior, or that it fails to provide an adequate basis for abstract thinking. Speakers of Black English want their children to learn Standard English. Is this best done by direct instruction or by osmosis?*

N.C.: Anyone who was familiar with language took for granted, or should have taken for granted, that so-called Black English is simply a language on a par with my urban Philadelphia dialect of English, the English of High Table at Oxford, Japanese, Greek, etc. If race, class, and other power relations were to change, Black English might emerge as the standard language and what I speak would be regarded as defective. None of this has anything to do with the nature of languages. The idea that Black English, or my urban dialect, or any other language fails to provide an adequate basis for abstract thinking is utterly implausible, and I think one should be extremely skeptical about claims to the contrary. Typically, they are based on gross misunderstanding.

Questions nevertheless arise about what should be taught in the schools. If speakers of Black English came to dominate and control American society, so that my speech would be regarded as nonstandard and defective, then it might be argued that my children should be taught the language of the dominant culture, Black English, not the particular variety of English that I speak. The decision would not be based on characteristics of the language, or on some ludicrous beliefs about how certain languages stand in the way of abstract thought, but rather on other considerations. Thus one would have to ask whether my children would suffer in the real world of power, authority, inequality, and coercion if they were not to acquire relevant features of the dominant culture. Surely this consideration would have to be given weight, if the welfare of my children were to be taken into account.

On the other hand, if my children were to be instructed in what amounts to a foreign

language, their intellectual development might be inhibited; there is little doubt, for example, that it would be harder for them to learn to read if the language of instruction were Black English, which is not the language that they acquired in their preschool environment. The same questions would arise if I had moved to Italy when my children were young. Exactly how these factors should be balanced is not a simple question, and there is no reason to believe that there is any uniform answer to them; too many factors vary.

My own personal judgment, for what it is worth, is that speakers of a language that is not that of groups that dominate some society should probably be taught in their own languages at least at the very early stages, until basic skills are acquired, and should be taught in the dominant language at later stages, so that they can enter the society without suffering disadvantages that are rooted in the prevailing power, privilege, and domination. One might hope to modify these features of the dominant society, but that is another question. Children have to be helped to function in the world that exists, which does not mean, of course, that they—or others—should not try to change it to a better world.

I am not presuming to express any firm judgments or to offer general proposals. There are a great many factors to consider, and the answers will surely not be the same for every person or every circumstance. We have to do here not with problems of language, but of the society at large, and they have to be confronted in these terms.

Editors' note:

Dr. Noam Chomsky granted this interview in the fall of 1987. We feel the interview offers *RT* readers a glimpse into the thinking of Chomsky, a person whose work has revolutionized the way language is studied. The interview was originally published in the *Reading Instruction Journal* of the New Jersey Reading Association. It is reprinted here with the Editor's permission and approval.

Putnam is Professor Emeritus at Kean College of New Jersey, USA, where she directed the reading clinic. Chomsky is at the Massachusetts Institute of Technology, USA.

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