

THE CREATIVE ASPECT OF CHOMSKY'S USE OF THE
NOTION OF CREATIVITY

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I

The question raised by Noam Chomsky at the beginning of his *Language and Mind*, "What contribution can the study of language make to our understanding of human nature?" has, in one form or another, been at the forefront of his philosophical discussions of the last fifteen years or so.¹ In his attempts to answer that question, a central role has been played by the concept of creativity—perhaps the single most influential concept in the "Chomskyan revolution" in psycholinguistics. It is the creativity of human language, so eloquently extolled by Chomsky and, in the eyes of his followers, decisively demonstrated by his generative-transformational linguistics, that he has repeatedly invoked in his campaign against behaviorism and in support of the dignity and uniqueness of man.

Yet there must have been others over the years who, like myself, have wondered just what it was about human creativity that Chomsky's linguistics was supposed to have brought to light. My own puzzlement reached its height a few years ago with the publication of his *Reflections on Language*;² there, in a chapter entitled "Problems and Mysteries in the Study of Human Language," Chomsky distinguishes "between two kinds of issues that arise in the study of language and mind: those that appear to be within the reach of approaches and concepts that are moderately well understood — what I will call 'problems'; and others that remain as obscure to us today as when they were originally formulated — what I will call 'mysteries'" (p. 137). Among the "problems," he classes questions of linguistic competence and of language acquisition; among the "mys-

¹*Language and Mind*, enlarged edition (New York, 1972), hereafter abbreviated as *L & M*; all page references to this work will be to this edition.

²*Reflections on Language* (New York, 1975).

teries,” questions of performance. “Roughly, where we deal with cognitive structures, either in a mature state of knowledge and belief or in the initial state, we face problems, but not mysteries. When we ask how humans make use of these cognitive structures, how and why they make choices and behave as they do, although there is much that we can say as human beings with intuition and insight, there is little, I believe, that we can say as scientists” (p. 138). So far, this is not surprising – it sounds like something one would expect him to say in light of his competence-performance distinction and his insistence that little can be said about the latter. He continues: “What I have called elsewhere ‘the creative aspect of language use’ remains as much a mystery to us as it was to the Cartesians who discussed it, in part, in the context of the problem of ‘other minds.’”

I found this last remark somewhat startling. I had gotten the impression from Chomsky’s writings over the years – and I thought I was not alone – that there was some very basic and revealing link between what was being done in transformational linguistics and the “creative aspect of language use”; that the latter was (or should be) somehow very intimately related to the concerns of linguistics. And now, without any indication that the goal he had set for himself, or one facet of the enterprise, had not panned out, this verdict: the creative aspect of language use is as much of a mystery as it ever was. Did I misunderstand all along? It is not so much that I thought that transformational grammar had made any contribution to, or thrown light on, what he called the “creative aspect of language use” (hereafter abbreviated as CALU), but rather it seemed for all the world as though *Chomsky* thought so; and, I thought, so did many others. (Did they now feel cheated on reading this “evaluation of the state of our understanding”?)

To be sure, there had been scattered clues along the way that I should have heeded, such as this statement in *Language and Mind*:

We do not understand, and for all we know, we may never come to understand what makes it possible for a normal human intelligence to use language as an instrument for the free expression of thought and feeling. [101]

Perhaps what confused me was reading, two pages later:

But I think that we are slowly coming to understand the mechanisms that make possible this creative use of language, the use of language as an instrument of free thought and expression.
[103]

In general, I tried to reconcile such passages by assuming that in the one Chomsky was referring to the absence of any explanation in terms of physical causes, whereas in the other he was talking about the “abstract mechanisms” that underlie the (creative) use of language. This could not be the case in the passage quoted from *Reflections*, for if he were to mean there that the CALU is a mystery because we lack explanations for it in terms of physical causes, then on that score competence and language acquisition would also have to be classed as mysteries.

Another way to put what is surprising about that passage is that it effects a divorce between competence and the CALU, the latter now being squarely on the side of performance. And shouldn't it be? After all, it is the creative aspect of language *use*, and language use *is* performance. Well, again, I always thought it should be, but it was not at all clear (to me, at least) that Chomsky thought so. Witness, for example, his 1967 paper, “Recent Contributions to the Theory of Innate Ideas,” where as the first of “several aspects of normal linguistic competence that are crucial to this discussion,” he lists the CALU³ (I remember how much trouble I had at the time working out how an aspect of language *use* – *i.e.*, of performance – could be a crucial aspect of normal linguistic *competence*, in light of his insistence that the two must be distinguished.)

It looks, however, as though I was not the only one to be confused, because I then came across another recent work, in which Chomsky complains of “an unfortunate tendency to confuse what I have called ‘the creative aspect of language use’ with something quite different, namely, the recursive property of grammars. This is a conceptual confusion, a confusion of performance and competence, in essence. I have used the term ‘creative aspect of language use,’ as the phrase implies, to refer to a

³ “Recent Contributions to the Theory of Innate Ideas,” *Synthese*, 17 (1967), 4.

property of the use of language, of linguistic behavior. ... The recursive property of generative grammars provides the means for the creative aspect of language use, but it is a gross error to confuse the two, as some linguists do.”⁴

In light of the importance of the notion of creativity in discussions of Chomsky's work and in his own writings, and now that the concept seems to have run its course, having more than done the job it was called upon to do – gather countless repentant behaviorists to the Chomskyan fold – it may be worthwhile and timely to undertake a close examination of his writings on the subject over the years to try to determine just what the relationship is supposed to be, according to Chomsky, between generative grammar and the CALU.³ This is what I propose to do in this paper, tracing the history of the notion of creativity through his writings in an effort to see whether a single, consistent picture emerges of what the CALU is and how it relates to transformational linguistics. In the process, perhaps light will also be shed on the source of the confusion that others, like myself, have succumbed to about this notion.

II

Creativity, so called, makes its first appearance with “Current Issues in Linguistic Theory.”⁵ In the opening section, entitled “Goals of Linguistic Theory,” Chomsky writes:

The central fact to which any significant linguistic theory must address itself is this: a mature speaker can produce a new sentence of his language on the appropriate occasion, and other speakers can understand it immediately, though it is equally new to them. Most of our linguistic experience, both as speakers and hearers, is with new sentences; once we have mastered a language, the class of sentences with which we can operate fluently and without difficulty or hesitation is so vast that for all practical purposes

⁴ “Dialogue with Noam Chomsky,” in *Discussing Language*, ed. Herman Parret (The Hague, 1974), p. 28.

⁵ “Current Issues in Linguistic Theory,” in *The Structure of Language*, ed. J. A. Fodor and J. J. Katz (Englewood Cliffs, 1964), pp. 50-118, hereafter abbreviated as *CI*.

(and, obviously, for all theoretical purposes), we can regard it as infinite. Normal mastery of a language involves not only the ability to understand immediately an indefinite number of entirely new sentences, but also the ability to identify deviant sentences and, on occasion, to impose an interpretation on them it is clear that a theory of language that neglects this “creative” aspect of language is of only marginal interest. [50-51]

The reference here as throughout the rest of the work, with one exception which we shall see, is to the creative aspect of *language* (hereafter, “the CAL”), rather than of language *use*. This is said to reside (consist?) in a speaker’s ability to produce and understand indefinitely many new sentences. The fact that this is done “on the appropriate occasion,” which will be the center of emphasis in later works, is here allotted only an incidental phrase, the important thing here being “that rote recall is a factor of minute importance in ordinary use of language” (p. 51). Similarly, in tracing “the realization that this ‘creative’ aspect of language is its essential characteristic ... back at least to the seventeenth century,” Chomsky quotes Cordemoy’s observation that “to speak, is not to repeat the same words, which have struck the ear, but to utter others to their purpose and suitable to them.” This, too, contains reference to appropriateness, but it is not yet made to play any role in the subsequent discussion.

Then a connection is made between a generative grammar and the speaker’s competence, and a distinction drawn between competence and performance:

On the basis of a limited experience with the data of speech, each normal human has developed for himself a thorough competence in his native language. This competence can be represented, to an as yet undetermined extent, as a system of rules that we can call the grammar of his language Clearly the description of intrinsic competence provided by the grammar is not to be confused with an account of actual performance Nor is it to be confused with an account of potential performance. The actual use of language obviously involves a complex interplay of many factors of the most disparate sort, of which the grammatical processes constitute only one. [51-52]

Now where does the creativity lie? In competence or in performance? Well, it is not clear – several of the relevant passages that, at first blush, might seem to suggest one or another interpretation, on a closer look resist a straightforward decision in favor of one or the other; where explicit, however, I think they clearly point to competence. Thus at one point, having drawn a distinction “between the kind of ‘creativity’ that leaves the language entirely unchanged [the kind he is interested in] ... and the kind that actually changes the set of grammatical rules,” he goes on to say that there are now technical tools readily available to deal with “rule-governed creativity” and “to attempt to represent certain aspects of the underlying ‘Form of language,’ insofar as it encompasses ‘rule-governed creativity,’ by means of an explicit generative grammar” (p. 59). Since it is clearly competence that is represented by the grammar, it must be competence that is here said to “encompass” rule-governed creativity.⁶

Throughout the essay, the reference is either to “rule-governed creativity” or to the creative aspect of *language* (the two seemingly used interchangeably). There is one passage at the end that departs from this. Coming back to an earlier criticism of “modern linguistics,” Chomsky chides it for having “failed totally to come to grips with the ‘creative’ aspect of language use, that is, the ability to form and understand previously unheard sentences” (p. 113). Here the creative aspect of language *use* is introduced for the first time and we are told that it is “the ability to form and understand previously unheard sentences.” So perhaps it is like this: the creative aspect of *language* in the other

⁶The following, on the other hand, is an example of a passage where it is quite impossible to tell where the creativity resides: “[Saussure) was ... quite unable to come to grips with the recursive processes underlying sentence formation There is no place in his scheme for ‘rule-governed creativity’ of the kind involved in the ordinary everyday use of language” (pp. 59-60). Does the “rule-governed creativity” of the second sentence refer to “the recursive processes underlying sentence formation” (as it seems to) – i.e., competence – or is rule-governed creativity something that is *made possible* by those recursive processes – i.e., performance? Well, the second sentence says that “rule-governed creativity” is involved in the *use* of language (hence in performance), but as we saw, so is competence said to be (one of the factors) “involved” in performance; hence creativity might be an aspect of competence and still be said to be involved in performance.

passages lies in “the recursive processes underlying sentence formation,” “the system of generative rules that ... embody the speaker’s competence” (pp. 59, 60), while the creative aspect of language *use* – *i.e.*, the ability to form and understand previously unheard sentences – is an aspect of performance. But I don’t think this will do: in the opening section of *CI* that I have quoted, it was this same ability that was referred to as “the creative aspect of *language*”; so the two seem to be used interchangeably. And now the question is whether, for Chomsky, “the ability to form and understand previously unheard sentences” is an aspect of competence or of performance. In the opening passage, Chomsky says, “Normal mastery of the language involves ... the ability to understand immediately an indefinite number of entirely new sentences.” I think “mastery of a language” can safely be taken to be competence, and so it would seem that in *CI* both the CAL and the CALU are aspects of competence. And it is either implied or stated explicitly in various places that in contrast to “modern linguistics” (B.C.), which has “failed totally to come to grips with the ‘creative’ aspect of language use,” generative grammar does at last address itself to it. Indeed, this was presented at the very beginning of *CI* as the goal of linguistic theory.

From now on the CALU is going to figure prominently in Chomsky’s writings, most notably in *Cartesian Linguistics*,⁷ where a chapter comprising almost half the book is devoted to it. I will come back to *Cartesian Linguistics* in the next section; here, anticipating somewhat, I would like to cite a passage from L & M:

When we study human language, we are approaching what some might call the “human essence,” the distinctive qualities of mind that are, so far as we know, unique to man and that are inseparable from any critical phase of human existence, personal or social. Hence the fascination of this study, and, no less, its frustration. The frustration arises from the fact that despite much progress, *we remain as incapable as ever before of coming to grips with the core problem of human language, which I take to be this: Having mastered a language, one is able to understand an indefinite number of expressions that are new to one’s experience, ‘that bear no simple physical resemblance and are in no simple way analogous to the expres-*

⁷ *Cartesian Linguistics* (New York, 1966).

sions that constitute one's linguistic experience; and one is able, with greater or less facility, to produce such expressions on an appropriate occasion, despite their novelty and independently of detectable stimulus configurations, and to be understood by others who share this *still mysterious ability*. *The normal use of language is, in this sense, a creative activity*. This creative aspect of normal language use is one fundamental factor that distinguishes human language from any known system of animal communication. [100; my emphasis throughout]

Here it would appear that the same thing which in *CI* he reproached previous linguists with having failed to do – namely, come to grips with the CALU – is what now, “despite much progress, we remain as incapable as ever before” of doing. It may be with this in mind that he adds:

With each advance in our understanding of the mechanisms of language, thought, and behavior comes a tendency to believe that we have found the key to understanding man's apparently unique qualities of mind. [Perhaps this is what happened at the time of *CI*.] These advances are real, but an honest appraisal will show, I think, that they are far from providing such a key. We do not understand, and for all we know, we may never come to understand what makes it possible for a normal human intelligence to use language as an instrument for the free expression of thought and feeling. [101]

I have already quoted the last sentence at the beginning of this paper, and as we saw, it is followed a couple of pages later by one that seems to be in direct contradiction to it: “But I think that we are slowly coming to understand the mechanisms that make possible this creative use of language, the use of language as an instrument of free thought and expression” (p. 103). Here the oscillation seems to be, not between whether creativity is involved in performance or in competence, but, it seems, simply between whether we do or do not understand what makes possible the creative aspect of language use – assuming that one may equate “the mechanisms” in the second passage with “what” (in “what makes it possible ...”) in the first. But perhaps one can't and I am misunderstanding something. Still, it would seem that understanding the mechanisms that make something possible should go some way toward dispelling the mystery that surrounds it.

In any case, the CALU now definitely seems to be an aspect of performance. Indeed, the oscillation we saw may reflect a new uncertainty on Chomsky's part about whether an understanding of the mechanisms of "competence" as defined by him – viz., as the mastery of a generative grammar – is capable of throwing light on (aspects of) "performance." This uncertainty would be generated by two factors, which may or may not be related: a new definition of the CALU – now as before stressed to be the *normal* use of language, only now differently characterized – together with a widening of the gap between competence and performance, the latter having come to be regarded less and less as a direct manifestation of the former. I will come back to the second factor later. As to the redefinition of the CALU, we saw that in *CI* there was mainly question of the creative aspect of *language* – i.e., the ability to produce and understand indefinitely many sentences and the recursive processes underlying this ability; and though there was one reference to the CALU, this was also glossed as "the ability to form and understand previously unheard sentences," the emphasis throughout being on the ability to do so for indefinitely many of them. And the task of a generative grammar was seen as that of "representing" or "describing" this ability (or at any rate, of representing the competence that was said to "involve" or "encompass" this ability), hence of accounting for the CAL and/or the CALU. In *L & M*, however, two new features have been added: the normal way of taking part in normal discourse is now described as "being innovative, free from control by external stimuli, and appropriate to new and ever changing situations" (p. 100). The two new properties which have been added—freedom from external stimuli and appropriateness to the situation – were elaborated in intervening works, particularly in *Cartesian Linguistics* and the first edition of *L & M*, with particular emphasis on appropriateness; this, it was said, was the only truly creative property upon analysis, since "the properties of being unbounded and free from stimulus control do not, in themselves, exceed the bounds of mechanical explanation" (*L & M*, p. 12). Having added these properties to the CALU, it must at one point have become painfully clear to Chomsky – as indeed it was to the reader – that his concept of competence and the genera-

tive grammar that was supposed to characterize it had nothing to say about them. Or was it the other way around – that realizing the danger to creativity if it is to consist merely in the capacity to produce and understand indefinitely many sentences, which in turn can be accounted for by a formal deductive system of rules, he chose, in order to rescue the spontaneity and freedom of the CALU, to give up any claim of being able to account for it?

Be this as it may, we find him complaining in the Preface to the enlarged edition of *L & M* that “a number of professional linguists have repeatedly confused what I refer to here as ‘the creative aspect of language use’ with the recursive property of generative grammars, a very different matter” (p. viii). As can be seen from the passages I quoted from *CI*, these linguists were not entirely to blame.⁸ Nor does Chomsky say anywhere that the recursive property of grammars was something he referred to at one time as “the creative aspect of *language*,” not to be confused with the creative aspect of language *use*, and the fact that he doesn’t would be consistent with my conjecture that he subsequently wanted to withdraw the term “creativity” from anything that could be accounted for by strictly mathematical means, or that he aimed to account for by such means.

At about the same time as Chomsky changed his views on creativity, his concept of “competence” underwent a parallel change, but in the opposite direction – becoming more and more remote from performance. While there was always a distinction between performance and competence, in the relatively early works the latter was seen as an ability that was directly reflected in performance, under a certain idealization. In time, however, Chomsky came to reject the conception of competence as the ability to speak and understand the language, in favor of a view of competence as “the speaker’s unconscious knowledge of the rules of the grammar.” The change again went without

⁸Cf. also *Aspects of the Theory of Syntax* (Cambridge, Mass., 1965), where it is said that now that we have “a real understanding of how a language can (in Humboldt’s words) ‘make infinite use of finite means’ ... it is possible ... to attempt an explicit formulation of the ‘creative’ processes of language. There is, in short, no longer a technical barrier to the full-scale study of generative grammars” (p. 8).

warning or acknowledgment. Instead, in his first John Locke lecture, he says:

In the past I have tried to avoid, or perhaps evade the problem of explicating the notion “knowledge of language” by using an invented technical term, namely, the term “competence” in place of “knowledge.” However, the term “competence” suggests “ability,” “skill,” and so on, through a chain of association that leads direct to much new confusion.⁹

The “new confusion,” however, is more likely to be due to Chomsky’s having changed his mind over the years about what the term “competence” stood for than to the fact that the term *suggests* “ability,” etc.; since the idea that the grammar was meant to characterize (describe, represent) a person’s linguistic *abilities* was already present in Chomsky’s writings before he even coined the term “competence” to designate what the grammar describes.¹⁰ In fact, it is likely that the term “competence” suggested itself to him as a technical term *because* he saw knowledge of language as an ability. An examination of his early writings reveals that he there uses the terms “competence,” “knowledge of language,” and “ability to speak and understand” interchangeably;¹¹ it is only later, as he came to insulate competence more and more from its manifestations in performance that he discarded the notion of competence as ability in favor of “knowledge of the rules of the grammar.” The early view we met with in *CI* that “normal mastery of a language involves ... the ability to understand immediately an indefinite number of entirely new sentences” seems symmetrically opposed to his more recent view, according to which, “in my sense of competence, the ability to speak and understand the language involves not only ‘competence’ (that is, mastery of the generative

⁹ “Knowledge of Language,” in *Language, Mind, and Knowledge*, ed. Keith Gunderson and Grover Maxwell (Minneapolis, 1975), p. 315. See also pp. 317-318.

¹⁰ See, for example, “Some Methodological Remarks on Generative Grammar,” *Word*, 17 (1961), 222.

¹¹ See N. Chomsky and G. E. Miller, “Introduction to the Formal Analysis of Natural Languages,” and “Formal Properties of Grammars,” both in *Handbook of Mathematical Psychology*, ed. P. Luce, R. Bush, E. Galanter (New York, 1963), II, 271 and 326.

grammar of the language, tacit knowledge of the language), but also many other factors.”¹²

It seems, then, that the definition of “competence” underwent a change at about the same time as the notion of “creativity,” from ability to knowledge in the one case, and from the CAL to the CALU (i.e., from competence to performance) in the other. Or rather, in both cases, there seems to have been an indeterminacy in the beginning, with no clear boundary drawn between the competing notions in each case, and then a definite rejection of the former view as either a “misunderstanding” or a “confusion.” In the case of the notion of “competence,” its removal to a more abstract realm may well be tied in with what critics have pointed to as an attempt to protect transformational grammar from evidence that tended to show that speakers do not employ its rules in forming and understanding sentences. (In the case of the CALU a different kind of protection may have played a role, at which I have hinted already and to which I will come back briefly in the concluding section.) But it is clear that while competence was seen as the ability to form and understand indefinitely many sentences and while “creativity” referred to that same ability, since the grammar was supposed to account for competence, Chomsky saw himself as accounting for creativity. Then as ability became “more closely related to behavior and ‘language use’ “ (*Reflections*, p. 23), creativity went with it, but made up for this by acquiring several more impressive properties in the process.

III

As creativity and competence went their separate ways, did Chomsky cease to draw a connection between the CALU and generative grammar? This is where the tangled part of the story begins: for on the one hand, the shifting of the CALU from competence to performance did not go without significant relapses and ambiguities; and on the other, even in works where the CALU is clearly discussed as an aspect of performance, of lan-

¹² “Linguistics and Philosophy,” in *Language and Philosophy*, ed. Sidney Hook (New York, 1969), p. 87.

guage use, there runs a persistent suggestion (not to say, at times, an explicit claim) that generative grammar is in some important way concerned with the CALU – in spite of a no less consistent emphasis on its being competence, not performance, that the grammar is concerned with. Let me illustrate: The decisive shift in the conception of the CALU occurs in *Cartesian Linguistics* (hereafter, *CL*), where the CALU first acquires the two new properties – freedom from stimulus control and appropriateness to the context – that definitively place it on the side of performance. It is as a privileged instance of the creativity of human behavior that the CALU is said to have been of interest to the Cartesians (whom Chomsky quotes with approval), in connection with their argument for the existence of other minds. At one point, “rule-governed creativity” is explicitly said to “constitute” the normal *use* of language (hence is clearly considered an aspect of performance) (p. 27). *CL* came out in 1966. In a 1967 paper, Chomsky cites three “aspects of normal linguistic competence that are crucial to this discussion.” As the first aspect, he lists:

1. CREATIVE ASPECT OF LANGUAGE USE.

By this phrase I refer to the ability to produce and interpret new sentences in independence from “stimulus control” – i.e., external stimuli or independently identifiable external states. The normal use of language is “creative” in this sense, as was widely noted in traditional rationalist linguistic theory.¹³

He then goes on to discuss the grammar that represents a person’s competence.

The CALU seems to have reverted here to its former, ambiguous status, or acquired some sort of hybrid existence. On the one hand, it is an ability and is listed as an aspect of competence; on the other, it is the normal *use* of language that is said to be “‘creative’ in this sense,” and independence from stimulus control has been added as in the discussion in *CL*. At another place in the paper, the recursive rules of the grammar are said to “provide the basis for the creative aspect of language use” (p. 7), further indicating that it is an aspect of performance. Well, perhaps it is not strictly speaking listed as an aspect of

¹³ “Recent Contributions,” op. cit., p. 4.

competence; it only *heads* the discussion of an aspect of competence, the aspect that has to do with the recursive property of grammars that makes the CALU possible. But then what is the relevance of bringing in “independence from ‘stimulus control’”? And there remains the fact that it is said to be “the *ability* to produce and interpret,” rather than the production and interpretation of, new sentences, which would tend to confirm that it is taken to be an aspect of competence. Well, not necessarily – as we saw, Chomsky’s views about whether the ability to speak and understand was competence or performance underwent a change at one point, and perhaps here ability was already regarded as performance.

One might then turn to *Topics in the Theory of Generative Grammar*, published the same year as *CL* and said to be devoted in part to clearing up some misunderstandings, and read:

The most striking aspect of linguistic competence is what we may call the “creativity of language,” that is, the speaker’s ability to produce new sentences, sentences that are immediately understood by other speakers although they bear no physical resemblance to sentences which are “familiar.” The fundamental importance of this creative aspect of normal language use has been recognized since the seventeenth century at least.¹⁴

This clinches it – it is linguistic competence. Yes, but now the reference is to the creativity of *language*, not language use. On the other hand, the second sentence has “this creative aspect of normal language *use*.” Well, maybe what this refers to is the *production* of new sentences, rather than the *ability* to produce new sentences, as in the first sentence Still, I think at this point the dexterity with which the CALU passes from competence to performance and back again is a little reminiscent of a prestidigitator’s trick; and one can only sympathize with the professional linguists Chomsky complains about in *L & M*, who “have repeatedly confused what I refer to here as ‘the creative aspect of language use’ with the recursive property of generative grammars, a very different matter.” One can’t help feeling that even though Chomsky has emancipated the CALU, removed it from competence, he cannot let go.

¹⁴ *Topics in the Theory of Generative Grammar* (The Hague, 1966), p. 11.

Even where the CALU is clearly presented as an aspect of performance, of language use, the connection with generative grammar is not given up. Thus the summary at the end of *CL* tells us that “the creative aspect of language use is once again a central concern of linguistics” (p. 72). Yet the long opening chapter devoted to the CALU throughout stresses those characteristics as being crucial which could not possibly be said to be of “central concern” to generative linguistics; thus it is emphasized that the mere unboundedness of human speech would not distinguish it from animal behavior or exclude a mechanistic explanation. “Animal behavior is typically regarded by the Cartesians as unbounded, but not stimulus free, and hence not ‘creative’ in the sense of human speech The unboundedness of human speech, as an expression of limitless thought, is an entirely different matter, because of the freedom from stimulus control and appropriateness to new situations.” It is “‘appropriateness of behavior to situations’ ... that is held to be beyond the bounds of mechanical explanation, in its full human variety” (p. 77). For Cordemoy, “a great deal of the complexity of human behavior is irrelevant to demonstrating that other persons are not mere automata,” but “there can be no mechanistic explanation for the novelty, coherence, and relevance of normal speech To show that other persons are not automata, one must provide evidence that their speech manifests this creative aspect, that it is appropriate to whatever may be said by the ‘experimenter’” (pp. 7-8).

But what has all this to do with generative grammar? In the introduction to the book, Chomsky assures us that though he will attempt “no explicit analysis” of the relation between “the leading ideas of Cartesian linguistics” presented and “current work that seeks to clarify and develop these ideas,” “the reader acquainted with current work in so-called ‘generative grammar’ should have little difficulty in drawing these connections for himself” (p. 2). I, for one, confess to having great difficulty in drawing the connection. The point seems simple: if a discussion of the CALU is to be relevant to generative grammar, then it should somehow relate to competence, since that is what the grammar attempts to represent. Just as obviously, then, in whatever way the CALU, as an aspect of linguistic performance, is characterized, linguistic

competence should include the competence requisite to the performance as characterized. That is, if one aspect of linguistic behavior (the only truly creative one, as it turns out) is its coherence and appropriateness to the situation-the fact that "we can distinguish normal use of language from the ravings of a maniac or the output of a computer with a random element" (*L & M*, p. 12)-then one feature of linguistic competence should be the competence or ability to use language coherently and appropriately. Nothing, of course, in Chomsky's concept of competence as mastery, or knowledge, of the rules of the grammar allows for this – having "internalized" a generative grammar is entirely consistent with "the ravings of a maniac or the output of a computer with a random element." But Chomsky does not seem to see any conflict here. The question he discusses instead in several places is whether there is an inherent contradiction in the notion of creativity restrained by rules:

There is no contradiction in this, any more than there is a contradiction in the insistence of aesthetic theory that individual works of genius are constrained by principle and rule. The normal, creative use of language, which to the Cartesian rationalist is the best index of the existence of another mind, presupposes a system of rules and generative principles The many modern critics who sense an inconsistency in the belief that free creation takes place within – presupposes, in fact – a system of constraints and governing principles are quite mistaken. ¹⁵

But the problem is that the rules he provides leave untouched what is by his own avowal the most important aspect of the creativity: the coherence and appropriateness of ordinary speech. Of course, that is why he now says that we do not know what makes the CALU possible, that it is a mystery; but even as he says that, he adds that the recursive rules which the speaker knows and which constitute his competence "provide the means" for it (or "provide the basis," "make it possible"). In the same lecture in which he expresses his frustration at the fact that "we remain as incapable as ever before of coming to grips

¹⁵"Language and Freedom," in *For Reasons of State* (New York, 1973), pp. 402-03; see also "Dialogue with Noam Chomsky," *op. cit.*, p. 29.

with the core problem of human language” (the CALU), he asks:

What is the nature of a person’s knowledge of his language, the knowledge that *enables* him to make use of language in the normal, creative fashion? [my emphasis]

and answers:

A person who knows a language has mastered a system of rules that assigns sound and meaning in a definite way for an infinite class of possible sentences. [*L & M*, p. 103]

Thus the system of rules is supposed to *enable* one to make use of language in the normal, creative fashion. He would, of course, say that it is a necessary, but not a sufficient condition. That is why, I suppose, he can say both that we know and that we do not know what makes the CALU possible. If one considers that the recursivity of the grammar is a necessary condition for being able to use language appropriately in any novel situation, then in that sense, one can say that the rules of the grammar make such behavior possible – that is, that without such a system one could not behave creatively. If, on the other hand, one sees that this still leaves the question of appropriate behavior entirely unexplained in the most important respects, one will say that we do not know what makes it possible.

Still, even if we should rest content with that, one can see that there is something wrong. According to Chomsky, linguistic performance and, as we saw, of late even the *ability* to speak and understand the language, involves many extra-linguistic factors in addition to linguistic competence – knowledge of the rules of the grammar. Since everything other than competence is considered “extra-linguistic” by Chomsky, and since he now insists that the CALU is *not* competence, then what is creative in the CALU would have to be considered, by his own account, *extra-linguistic*. Yet he calls it “the core problem of human language” and refers to “language, with its *inherent* creative aspect” (*L & M*, pp. 100 and 102, my emphasis) even *after* the CALU has received its final characterization with appropriateness seen as the crucial property. It is clear that he wants language to bathe in the aura of the CALU; but then his account of language and of the knowl-

edge of it leaves the CALU out completely. Is it sufficient to say that language, or the rules of the grammar, “provide the means” for the CALU? In his framework, isn’t this somewhat as though we went on and on speaking about the creativity of painters, the creative aspect of the painter’s use of his brush, that he makes “infinite use of finite means,” and attributing to brushes an essential role in artistic creativity, and then felt frustrated because even though we have said everything that can be said about brushes, we have left untouched “the core problem” of painting (or is it of brushes? This is where his ambivalence on “language” comes in) – “the creative aspect of brush use”? I am not saying, of course, that the role of language in the CALU is parallel to that of brushes in painting, or the CABU; I am only pointing out that according to Chomsky’s account, this is what legitimately emerges; in his framework, the role of language in the creative performance of the speaker is no more essential than that of brushes in the painter’s creative performance. (One might object that brushes are not indispensable to painting in the way in which language is to verbal behavior; but, as the Cartesians have noted, it is human *behavior* that is creative, the use of language being one, or the most important, mode of this; and the same holds for painting and brushes.) Of course, there is the difference that painters are not born with an innate capacity to “grow” brushes, as we are, according to Chomsky, endowed with one to “grow” language (see, e.g., *Reflections*, p. 11). But would it add much to the impressiveness of their creativity if they were? It would be an interesting fact about creative painters, but would by no means help “to come to grips with the core problem” of painting.

To sum up the point I have been trying to make: If language is what Chomsky says it is – something that is accounted for *in toto* by the rules of transformational grammar – and if the CALU is as he describes it, then the CALU is really the creativity of human behavior, involving the use of language as a quasiextraneous instrument with which one performs creatively, but with no glory thereby devolving to language. Alternatively, if language is to play more than such a role in the CALU, “provide the means” for it, in the true sense, then it has to be more than what Chomsky says it is. He wants the glory of the CALU to

reverberate on language, but at the same time, by defining, or describing (or confining and *circumscribing*) language as he has, he has made this impossible.

IV

This oscillation between reducing language to whatever can be accounted for by the grammar and enrolling it in his glorification of human creativity helps explain the very different and contradictory reactions which Chomsky has elicited. He has been alternatively praised for having “taken a major step toward restoring the traditional conception of the dignity and uniqueness of man” and accused of having made “fully explicit, perhaps for the first time since Hobbes prematurely drew the same conclusion on the basis of Newtonian physics the traditional philosophical assumption that man’s unique attribute may be to be a highly sophisticated computer.”¹⁶ Many other such evaluations can be found on both sides. On the admirers’ side we have, among others, all the converts to Chomskianity who feel that Chomsky’s notion of “creativity” (even if by this they mean only generativity) has revolutionized “our” view of human nature; on the side of the critics, those who feel that the logical conclusion to draw from Chomsky’s account of Descartes’s views on the limits of a mechanical explanation of the human mind, together with what Chomsky says elsewhere, is that Descartes and his followers simply lacked the foreknowledge to imagine sophisticated present-day computers. They appeal to such passages as the one in which, having argued that the principles of universal grammar are innate, Chomsky writes: “Notice again that there should be nothing surprising in such a conclusion. There would be no difficulty, in principle, in designing an automaton which incorporates the principles of universal grammar and puts them to use to determine which of the possible languages is the one to which it is exposed” (*L & M*, p. 135; see also *L & M*,

¹⁶ The first view is expressed by John Searle in “Chomsky’s Revolution in Linguistics,” *New York Review of Books*, June 29, 1972, p. 24. (Searle disagrees with Chomsky’s account of competence, so he is not a true representative of his followers, but the quote is typical); the second is from Hubert Dreyfus, *What Computers Can’t Do* (New York, 1971), p. 241.

p. 84). According to Chomsky, such proposals “can be properly regarded as a further development of classical rationalist doctrine, as an elaboration of some of its main ideas regarding language and mind” (*L & M*, p. 84). (One might also point to the footnote in *CL*, appended to his discussion of La Mettrie’s view that man is simply the most complex of machines and that there is no difficulty in accounting for thought on mechanical principles, just as there should be no obstacle in principle to teaching an ape to speak, or to making a talking machine. Having pointed out that this disregards “the problem raised by Descartes – the problem posed by the creative aspect of language use,” Chomsky adds in a footnote: “This is not to deny that the method of explanation suggested by La Mettrie may be in principle correct” [p. 81].)

One may be tempted to apply to Chomsky his own evaluation of Skinner that “it would be more accurate to regard [his work] as a kind of Rorschach test”; that “if certain of his remarks suggest one or another interpretation, it must be stressed that these do not follow from his ‘science’ any more than their negations do”;¹⁷ in Chomsky’s case, not because his science (of linguistics) is “vacuous,” but because it is *neutral* with regard to the question of human dignity; and not because *what* he says can be interpreted in contradictory ways, but because alongside his science there are two contradictory facets to his writings and one may choose to stress or to single out one or the other. Actually, had he not been so intent to enlist his linguistics in helping him promote his case for the uniqueness, dignity, etc., of man, he would be less susceptible to the charge of having reduced man to an automaton, since the fact that a formal description can be given of some of the regularities underlying language, or even that part of the “cognitive structure” of man can be duplicated in principle by a computer, need not preclude the rest from being “free and creative.”

I mentioned earlier that Chomsky’s oscillations on “the creative aspect of language use” leave me with the impression of having witnessed a prestidigitator’s trick; I should add that his immense success in combating behaviorism and in making converts leaves

¹⁷ “Psychology and Ideology,” in *For Reasons of State*, op. cit., p. 319.

me with that same feeling. I find particularly remarkable the enrolling of Descartes and the whole Cartesian tradition in reference to things about which, to use his own words, “there is much that we can say as human beings with intuition and insight”; about which, however, “there is little ... that we can say as scientists”;¹⁸ about which not only did the Cartesians have no more to say, but according to Etienne Gilson, “all they did in this regard is to render the existence of human language philosophically incomprehensible and its very possibility inconceivable.”¹⁹ Chomsky’s appeal to Descartes’s doctrine of innate ideas is doubly baffling if one considers that it enlists what elsewhere Gilson has called that “side of his personality where he is not truly himself, and to put it bluntly, one of his defects.”²⁰ Yet on reading Gilson’s account of the significance of the appeal to innateness in Descartes’s philosophy, I was struck by a parallel with Chomsky’s enterprise, though not exactly where Chomsky has located it – in the controversy between rationalism and empiricism – but rather in the role that innateness was made to play in both cases.

According to Gilson, Descartes needed innate ideas in order to show that his physics was not incompatible with the fundamental truths of religion. Having radically separated thought from extension so as to establish his physics on a firm foundation, entirely in terms of extension and movement and purged of mentalistic notions, he had to show that a knowledge of God was still possible; that the mind (or the soul) was able to grasp the truths of religion in complete independence from the body. This is what the doctrine of innateness was to allow him to do. Gilson shows that Descartes did not have far to go to find this doctrine; in particular, Mersenne, his most intimate friend, had adopted innate ideas in his campaign against atheism, together with St. Anselm’s argument from perfection. Gilson’s thesis is that Mersenne became for Descartes a theological authority. Thus, according to Gilson, the main significance of

¹⁸ See the quotation from *Reflections* in Sec. I above.

¹⁹ Etienne Gilson, *Linguistique et philosophie* (Paris, 1969), p. 110; my translation.

²⁰ Etienne Gilson, *Etudes de philosophie médiévale* (Strasbourg, 1921), p. 3; my translation.

the appeal to innate ideas at the time of Descartes was that it allowed him to found the proof of God's existence on the contents of thought alone, radically severed from extension, while at the same time it allowed Mersenne to ruin atheism, whose foundation he thus undermined.

Can we draw an analogy with Chomsky's attempt? I think so. One parallel, of course, is that critics have as much trouble pinning Chomsky down concerning the meaning of his doctrine of innateness as it was difficult to do so in the case of Descartes. But I see a more striking analogy – not so much between the two adversaries that Chomsky has pointed to, rationalism vs. empiricism, but between two others. Descartes's physics would have threatened God were it not for innate ideas; Chomsky uses them to reconcile his linguistics with a belief in Man – his creativity and uniqueness; and while Mersenne was intent on combating the deists, the libertines, and the atheists, Chomsky's nonbelievers are the structuralists, the empiricists, and the behaviorists. In fact, I like to speculate that his change of mind about creativity, first said to be accounted for by his rules and then reestablished as a mystery, is due to his having noticed at one point the danger to creativity if it could be accounted for by transformational grammar, and having backtracked and put it out of reach, preferring to give up any claim of accounting for it to engulfing it in the process. In this he was more faithful than Descartes, whom Pascal reproached with having discarded God after using him to give his universe a shove, and more perspicacious than Malebranche, who in enlisting Descartes's philosophy in a defense of the Faith is said to have contributed considerably to its breakdown.

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