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978-0-521-70817-3 - Cartesian Linguistics: A Chapter in the History of Rationalist Thought, Third Edition

Noam Chomsky

Excerpt

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## Introduction to the third edition

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*James McGilvray*

### I An overview

*Cartesian Linguistics* (CL) began as a manuscript written while Noam Chomsky was a 35-year-old fellow of the American Council of Learned Societies. An early version of it was prepared for presentation as a Christian Gauss lecture on Criticism at Princeton University early in 1964. Perhaps because it proved beyond the audience, it was not delivered, and Chomsky presented a general lecture on linguistics as understood at the time. The manuscript, however, was revised and published in 1966. An intellectual tour de force, CL is not an easy text to read, but it is certainly a rewarding one. It is an unprecedented and – so far – unequalled linguistic–philosophical study of linguistic creativity and the nature of the mind that is able to produce it.

CL begins by describing the sort of linguistic creativity that is found with virtually every sentence produced by any person, including young children. As its subtitle (“A Chapter in the History of Rationalist Thought”) suggests it will, though, CL soon turns to focus on the kind of mind that is required to make this sort of creativity possible, and on the best way to study such a mind, and language in it. The seventeenth-century philosopher René Descartes figures prominently in the discussion and the book’s title. This is because he was among the first to recognize the importance of this ‘ordinary’ form of linguistic creativity – creativity exhibited by everyone, not just poets – for the study of the human mind.<sup>1</sup> Because of this, and because a group of linguists and philosophers who came after Descartes shared his insight (even though they might have disagreed with Descartes in other ways) and directed their study of language and the mind towards dealing with the issues it posed, Chomsky titled his study of their work and of their opponents’ *Cartesian Linguistics*. Those who Chomsky thinks can plausibly deal with the issues that linguistic creativity poses for the study of mind and language he calls “rationalists”; those who cannot, he calls “empiricists.” In this introduction I add ‘romantic’ to Chomsky’s label ‘rationalist’ to emphasize what is implicit in a study of ordinary linguistic creativity and its role in human thought and action: that the rationalists of interest to him, like the romantics he focuses on, recognize the

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centrality in everyday life of freedom of thought and action, and they try with their view of the human mind to speak to how this creativity is possible. For many of them – and certainly for Chomsky in particular – the nature of language itself as a component of the mind/brain plays a central role in the explanation.

*Cartesian Linguistics* has many assets. One is that it places Chomsky's effort to construct a science of language in a broad historical context. It does not pretend to be a work in intellectual history; it is too brief and too selective in the individuals it discusses for that.<sup>2</sup> But it does offer important insights into the works of historical figures, and uncovers and discusses often-ignored but clearly relevant historical texts. It also revitalizes a rivalry that has lasted for centuries and that – in 1966 and still now – continues in the cognitive sciences.

Another asset is the understanding it gives of the basic observations that lie behind Chomsky's – and other rationalist-romantics' – research strategy or fundamental methodology for the study of language and mind. There are two sets of observations. One – the "poverty of the stimulus" facts – focuses on the gap between what minds obtain when they acquire a rich and structured cognitive capacity such as vision or language and the small and 'impoverished' input that the mind receives as it develops the capacity. Another – the "creative aspect of language use" observations – focuses on the fact that people, even small children, use language in ways that are uncaused and innovative, while still appropriate. Because of its extensive discussion of linguistic creativity, *Cartesian Linguistics* focuses more than any of the rest of Chomsky's works on the creativity facts, and explores their implications for the science of mind and the explanation of behavior – and it touches on their broader implications for politics and education, and even art – especially poetry. By describing a form of creativity that everyone exercises in their use of language – a creativity that figures in virtually all thought and action where language figures – it highlights a common phenomenon that seems to defy scientific explanation. Humans use language creatively routinely, yet this routine use seems to be an exercise of free will. If it is, it would hardly be surprising if the tools of science, which work well with determination or randomness, fail to describe or explain the use of language. Free actions are uncaused, hence not determined, yet they are nevertheless typically appropriate, hence not random. To Chomsky, as to other rationalist-romantics, this suggests that if you want to construct a science of mind and language, you should avoid trying to construct a science of how people use their minds, and especially their language. Do not try to construct a science of linguistic behavior. Perhaps, in fact, given the degree to which language infuses and shapes so much of how we understand and act, do not try to construct sciences of action and behavior in general.

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This is *not* to say that one should not try to construct a science – in fact, many sciences – of the mind. And it did not stop any of the rationalist–romantics – with the partial but puzzling exception of Descartes<sup>3</sup> – from trying to construct sciences of mind and language.

After all, the poverty of the stimulus facts for language and other domains, such as vision and facial recognition, suggest that there can be sciences of at least some components of the mind. They seem to indicate that the mind is made up of innate systems that grow automatically, much as do the human heart and liver. Adopting such a research strategy is called “nativism”; rationalist–romantics are *nativists*. Adopting this strategy, Descartes to an extent aside, rationalist–romantic strategists aimed in one way or another, and with different degrees of success, to offer species-universal, objective theories of various components of the mind, components of the mind that the tradition called “faculties.” Mental faculties – we would now say “modules” – do seem to work determinately. Or at least, rationalist–romantic efforts, such as Descartes’s ventures into a computational theory of vision, the Port-Royal grammarians’ efforts to produce a Universal (“philosophical”) Grammar, Cudworth’s speculations about the nature of “an innate cognoscitive power,” and von Humboldt’s effort to deal with the mental machinery needed to provide for creativity, have managed with varying success to deal with aspects of deterministic sciences of various faculties. Progress has been much greater since the mid-1950s. David Marr and Chomsky and their co-workers have produced advanced nativist sciences of vision and language. Their obvious success – and the more limited successes of earlier rationalist–romantics – seems to indicate that it is possible to construct sciences of various parts of the mind/brain, although not of the ways in which humans use what these components provide them to deal with the world and otherwise solve various problems.

The very real risk of failure when one tries to go outside the head to deal with the complexities of human action and behavior suggests that the scientist of mind should focus on what is ‘in the head’ and how what is in a particular person’s head comes to have the shape and ‘content’ that it does – how it ‘grows’. Chomsky’s term for this strategy for the study of mind is “internalist.” In addition to adopting nativist assumptions, rationalist–romantics adopt an *internalist* approach to the sciences of mind. Linguistic creativity observations seem to suggest that this is the only one likely to prove fully successful. Of course, some of the evidence for a science of what is in the head (although by no means all) comes from observing how a person behaves – in the case of language, how a person pronounces a sentence, and when and where s/he uses it, among other things. But, obviously, an internalist theory of what is in the head is not just a compilation of this or any other kind of evidence; the theory is concerned with what really is in the head and how it works. It is concerned with the principles of operation of a faculty/module, with its internal

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inputs and outputs, and with how this faculty develops and grows as the organism develops. It does not follow, by the way, that the rationalist–romantic theorist’s nativist and internalist approach to the mind has nothing to say about creative linguistic behavior and action. For as suggested above it can – and does – account both for what in the human mind makes linguistic creativity possible, and for why linguistically informed creative behavior is available only to humans.

In recent years Chomsky’s label for his approach to mind and language has changed from “rationalistic” to “biolinguistic.” He and others working in the field are now called “biolinguists.” The label change highlights a characteristic of Chomsky’s efforts to construct sciences of language from the start of his work; the aim has always been to try to accommodate the science of language to some natural science, thus biology – for biology alone can explain how language is innate, why it is unique to humans, and how it grows. Nevertheless, biolinguistic research strategy is just the rationalist–romantics’ nativist and internalist strategy updated. The same poverty and creativity observations continue to be honored. Rationalist–romantic (RR) research strategy is alive and well in the practices of biolinguists.

A third asset of *Cartesian Linguistics* (CL) is that it points to the central role of linguistic creativity in almost all human affairs. Unlike organisms that lack language, we can and do think and talk about anything, anywhere; we speculate and wonder, question and doubt, organize ourselves in non-kin and non-contact communities, cooperate to carry out projects, live and thrive in many environments, engage in fantasy and play, and so on. Our cognitive capacities in general are much more flexible than those of other creatures. We can adapt to various environments and solve (and create) problems well out of the range of any other kind of creature. We can make and interpret art, develop various forms of religion and the kinds of explanation they offer, develop ourselves and our cultures. Linguistic creativity surely has a central role to play in all this, and the operations of the language faculty in making possible this central feature of what makes us human – giving us our distinctive human natures. The implications of this gift were not lost on A. W. Schlegel or von Humboldt or, following them, Chomsky. Some are political. I discuss some of these briefly in another section of this introduction.

The introduction has four parts. In the next, Part II, I discuss in more detail the place of the rationalist–romantic view of the mind and its study in Chomsky’s work, and explain how this view, and along with it his science of mind, have developed since 1966’s *Cartesian Linguistics* to become contemporary biolinguistics. I also contrast it to the empiricist view of the right strategy to use in investigating the mind, focusing on some of empiricism’s contemporary versions. One of my aims in this part is to emphasize the importance of taking Descartes’s creativity observations seriously. Doing this while also taking

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seriously the poverty of the stimulus observations leads – I suggest – to the remarkable progress seen in recent years in the scientific study of mind and language. Part III focuses on Descartes and his contributions and failures. The other, Part IV, takes up briefly some of the implications of biolinguistic study of language and mind for politics and education.

Readers might want to read Chomsky's rich text right now, and return to Part II to learn more about the RR strategy for the study of mind, and about progress in Chomsky's approach to language since 1966. Alternatively, they might want to read Part II now to get an overview of the RR research strategy and why it seems to lead to progress in the science of mind where empiricist strategy seems to fail. Parts III and IV are for those who become curious about Descartes's specific contributions, and about the implications of an internalist and nativist research strategy for politics and education.

This third edition of *CL*, like an earlier second, is in English alone. In the original 1966 text, Chomsky left many quotations drawn from the works of those he discusses in French or German; for the most part, he used translations only if they were available at the time.

To make the second edition more accessible to the wider audience *CL* deserves, Susan-Judith Hoffmann translated the texts in German that remained, and Robert Stoothoff the parts that remained in French. Most of the French translations of Descartes's works that Chomsky had included in the original have been replaced with improved ones from later translations – specifically, those available in volumes 1–3 of John Cottingham, Robert Stoothoff, Dugald Murdoch, and (for the third volume alone) Anthony Kenny's Cambridge editions of *The Philosophical Writings of Descartes*. With all translations, an effort was made to suit both the original text and Chomsky's terminology. Sometimes this required minor modifications in available translations to make clear what Chomsky seems to have seen in the untranslated originals. I cannot – no one can – guarantee that the translations or changes exactly capture what the original texts intended, of course, but the overall result meets, I believe, the demands of both scholar and student, thanks to Professors Stoothoff and Hoffmann's admirable work. Finally, I thank a former graduate student (now professor), Steve McKay, for his work in the preparation of an index for the second edition; the original had no index at all. The current index modifies McKay's to accommodate this introduction.

Note the following conventions: Chomsky's endnote numbers continue from those of the new introduction. Editorial additions to Chomsky's notes appear in square brackets [...]; for the most part, these additions offer suggestions for further study. Chomsky's references to texts and pages remain as they were in the original; all additions have the form (Author, date of publication: page). I added bibliographical items dated after 1966.

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Noam Chomsky read this introduction early in 2008 and sent me many useful comments. I am very grateful; his comments led to several changes and improvements. In two places, I simply quoted what he had to say. I am also very grateful to Cedric Boeckx, Oran Magal, and Juhani Yli-Vakkuri for reading drafts of this introduction. I don't doubt that errors remain. They are, however, entirely mine.

## II The science of mind and language

### II.1 *Creativity and poverty: internalists, nativists, and their opponents*

Rationalist-romantics (RRs) and empiricists differ a great deal in their views of the mind and – not surprisingly – in their views of how the mind should be studied. They differ both in how they conceive of the mind having the ‘shape’ and content it does, and in how they conceive of the role of the world outside the head in shaping and giving content. Empiricists claim that we *learn* much of what we get – at least, when it comes to ‘higher’ concepts and cognitive processes. RRs disagree; these are mostly innate.<sup>4</sup> Comparing these views highlights the features of each, and allows us to ask which view, and which research strategy based on that view, has the best prospects of success.

To illustrate their differences, let us look at how each camp conceives of two kinds of mental entities and how they come to be in the mind – how they are acquired or learned. One class consists of ‘atomic’ concepts such as WATER, DRINK, COLD, and thousands of others that we use in various ways to carry out various cognitive tasks, such as describing, speculating, reminiscing, telling stories, etc. The other class of ‘entities’ consists of the rules or principles that govern how the mind puts the elemental concepts that words express together to assemble the complex concepts expressed by phrases and sentences. Phrases include “drink cold water,” and endless others; sentences include “Jane will only drink cold water” and endless others. Humans – or better, human minds – routinely put together complexes such as these.<sup>5</sup> The RRs hold that the mind’s concepts and the ways of putting them together in language and thought are largely innately configured; they also hold, then, that the right way to study the mind is to construct theories of the various sorts of inner mental machinery that put concepts in place or ‘activates’ them, configures them in forms that the machinery allows or requires, and does the same for the rules or principles that govern how to put concepts together in the complex forms expressed by sentences. The RR theorist is a *nativist* (someone who maintains that both concepts and the ways to put them together to make complexes such as those expressed by sentences are somehow innate, implicit in the mind). And because the RR researcher is a nativist and tries to say what concepts and combinatory mechanisms are and how they develop in a child’s automatic process of

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maturation by constructing theories of the innate mechanisms and their operations without trying to include any objects outside the head in the subject matters of their theories, RR theorists also adopt an *internalist* research strategy.

RRs (see in this regard especially *CL*'s discussions of von Humboldt and Herbert of Cherbury) point to what they see as a strong connection between nativism and the phenomena of everyday linguistic creativity. 'Ordinary' linguistic creativity along with its important consequences – the capacity to engage in fantasy, speculation, play, planning, thought unconnected to current circumstance, plus the capacity to construct 'theories' of the world, such as speculating who is going to win the next election or the next game of football – is readily available to everyone at an early age, RRs hold, only because hundreds of thousands of richly endowed linguistically expressed concepts and the means of putting them together are innate and thus readily available at an early age. Because they are, children's minds readily provide innovative sentences, which the child can use in multiple ways. Anyone can observe mental creativity in young children – it is found in using often-novel sentences in understanding and doing in various ways. It is exhibited not just in speech, but in turning cardboard boxes into houses, in a child's fantasies, in wondering about how something works, in children's estimates of what their parents and other children intend, in their experimentation with various tools and toys, and so on. The issue is how young children can manage to be so creative at a young age – certainly by the time they are four or so, often before then. Since one must assume that with a child as with anyone else, the conceptual tools one needs to classify and think, and the combinatory mechanisms that allow one to put concepts together in various kinds of arrangements must be in place before they can be assembled in complexes, the only way to explain the early appearance of creativity is to assume innateness of both concepts and combinatory principles. And it is only because these concepts and principles of assembly and the ways to activate them with minimal experience are built into children's mind – presumably lodged in their genome and the ways it develops or grows – that we can quickly understand their creative efforts, and they ours. Innateness provides a basis for understanding one another, even at a young age. For innate concepts can be thought of as the meanings of words (lexical items, in technical terms); they constitute words' 'internal content' (or perhaps 'intrinsic content').

As suggested in Part I, RRs also emphasize a connection between creativity and their decision to adopt internalism as a research policy for the scientific study of the mind. Consider what happens if one decides to construct a theory (a science now, not a guess about the outcome of a football match) of an interesting and important aspect of the use of language and concepts – using language to refer to things. At the very least, attempting this requires focusing not just on words and how they are assembled into phrases and sentences in a system in the head, but on relationships between these internal entities and things and classes



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of things in the outside world. Doing this expands the subject matter of one's theory to include not just mental objects – concepts and such – but things and classes of things in the world, and perhaps their properties too. It also demands that the relations between what is inside the head and what outside be 'natural' and determinate, fixed perhaps by something like biological growth. That is a daunting and – if the creativity observations are taken into account – very likely impossible task. One will find no determinate head-world relations of the sort required to 'fix' the uses of sentences.<sup>6</sup>

Yet many contemporary philosophers – Putnam, Kripke, Burge, Fodor, etc. – believe that in order to make sense of how language is meaningful at all, and for its words to have meaning, one must assume a determinate connection between some nouns, at least, and things in the world – a single thing for a proper name, or a class of things for a general term. The relationship must be determinate, or involve very few specifiable options. Otherwise tools of theory-construction fail. Proceeding on this assumption, the supposed determinate relationship is often called "reference," although "denotation" and "signification" are also used. It is often claimed that nouns, or at least some of them, refer "rigidly," to use Kripke's colorful terminology. Ordinary linguistic creativity poses a serious problem for an attempt to construct a theory of meaning that requires determinate head-world relationships. If you hold that meaning depends on reference and you want a theory of meaning for a language, you better hope that for each noun, there is a determinate referent. Or if, like Gottlob Frege (1892), you think that a referential relationship to things is more complicated, that a word is first linked to a sense (for him, an abstract object), and a sense in turn fixes a reference, you better hope that for every noun there is a single sense, and for each such sense, a single referent. Otherwise, your theory will have to allow for all of the complex and highly variable factors that figure in a person's use of language for various purposes, and in the efforts people make to understand what another person's linguistic actions mean – what they intend by them, including what they intend/mean to refer to, if anything. You will have to take into account changes in speaker intentions, in the kind of job a word is being asked to do (tell someone how to get to Chicago, criticize a work of art...), in the circumstances of speech, in irony as opposed to flat-footed description, in fiction as opposed to fact, and so on. To specify what the context of discussion is, you will have to say what count as the "subjects which form the immediate focus of interest" (to quote the philosopher Peter Strawson);<sup>7</sup> and there is little hope that anyone can say what these are in a way that allows for any kind of population-wide uniformity, unless possibly – the limit case, and hardly relevant for the conception of language, meaning, and reference the philosophers under consideration have in mind – the population consists of the speaker alone, at a time, trying to accomplish a single, well-understood task. More generally, there is no guarantee that anything, even when dealing with flat-footed



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description and small populations, can be fixed determinately. To fix is to fix language use. Unfortunately for your project of constructing a theory based on hopes like these, as Descartes long ago and Chomsky in *CL* and elsewhere (*New Horizons in the Study of Language and Mind* – Chomsky 2000 – among others) point out, people just do not care about what your theoretical efforts demand – they do not want, and do not produce, fixed uses, even of nouns.<sup>8</sup> And yet to a degree that seems to be adequate for solving everyday practical problems, at least, people still manage to understand theory-resisting free uses of expressions. Resisting the needs of those who would like to have regularity and even determination, people seem to benefit from their capacity to be creative. They enjoy using words in all sorts of ways, all the while being adequately (for the task(s) at hand) understandable and speaking appropriately. Apparently, using a word – noun or other word – in the same way all the time is as tedious as putting a widget in a slot on an assembly line over and over. In sum, in no case does anything *determine* how they or you must use a word or understand it when used by another, for whatever purpose, on whichever occasion. The use of language is a form of human action, and it is on the face of it a particularly innovative and uncaused, yet coherent and appropriate free form of it.

Nevertheless, someone drawn to the kinds of cases Kripke and others focus on to provide a motivation for taking proper names as “rigid designators” seriously might suggest that nothing else explains how people with widely differing views of, say, Dick Cheney can still use “Cheney” and expect others to know who they intend. Given different understandings of Cheney, one cannot rely on what those others happen to know or assume about Cheney. So – it is argued – there must be *some* referential relationship that does not rely at all on people’s knowledge or understanding of Cheney, or any other object or event to which one wants to refer. But this attempt at convincing an RR theorist is bogus. Nothing outside of context of speech or author-controlled context of writing<sup>9</sup> *antecedently fixes* a reference – antecedently, that is, to someone’s using a term to refer, and someone else interpreting what the speaker says, using whatever resources s/he has. Of course, the process of determining what another person “has in mind” can fail, although our resources often prove sufficiently reliable that it does not matter for the purposes of discourse. These resources include shared biologies, as well as environments, communities, interests, choices in lexical pairings of sounds and the semantic features of the hearer’s lexicon, and the like. These usually suffice. They must: words do not refer, people do – and those who would understand the speaker must, as best they can, put themselves into the position of the speaker by using whatever resources they have to figure out what the speaker has in mind.

Two difficulties confront those who want to claim that there ‘is’ a referential relationship between natural language terms and things ‘out there’. One is that in few cases – perhaps none – is there reason to think that the world ‘out there’

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actually contains any ‘things’ of the sort the fixed referentialists have in mind. London is a set of buildings on a territory, but it (the same ‘thing’) could be moved upstream to avoid inundation; Chomsky wrote *Failed States*, which weighs half a kilo and it (the half kilo of wood pulp) is compelling (because it contains an argument); my personal library has *Failed States* and my university library has it too; Theseus built a ship and replaced all of its planks which were then reassembled in the same positions, but Theseus’s ship is the rebuilt model, not the reassembled one. The ways we understand things are fixed by our conceptual resources, and our conceptual resources clearly allow for things to be abstract and concrete at the same time; they contain wood pulp and information; they are one yet many; they let ownership and responsibility trump material constitution. These are only a few innumerable illustrations that indicate that we ‘make’ the things of our world to suit our conceptual resources, and that typically these ‘things’ are identified in terms of our interests, not some kind of objective standards. We routinely name persons, but what ‘are’ persons such as Dick Cheney? PERSON is what Locke called a “forensic” concept, one that suits our need to assign responsibility for actions and that maintains psychic continuity. The point is general, the things and classes of things that make up the world as we typically understand it are not the well-defined entities of the sciences. What, however, of a referentialist favorite, WATER? Surely water is H<sub>2</sub>O? Chomsky (2000, 1995a) offers many examples that indicate that we natural language users have nothing like the scientist’s H<sub>2</sub>O in mind when we speak and think of water. We find no difficulty in saying that water becomes tea when heated and a tea bag is placed in it. Our water washes us and our possessions; it may or may not be clear; it is what is in a river, no matter what it may contain in addition, even if pollutants constitute the majority; water can be calm or disturbed; and so on. Most of the universe’s water is in a glassy state (in asteroids, and the like), yet if a glass is made of this material, it is not offered for chewing when one asks for a glass of water. These and other examples constitute the background for Chomsky’s otherwise enigmatic remark that “Water is H<sub>2</sub>O” is not a sentence of English. It is not because H<sub>2</sub>O belongs to molecular chemistry, WATER is what our natural language English “water” expresses. If still not convinced, Chomsky points to a parallel in phonology. The syllable /ba/ is in the head. It is not ‘out there’. The point is general: linguistic sounds are ‘in the head’. They do not issue from people’s mouths. All that issues from people’s mouths when they speak is a series of compressions and decompressions in the air, not /ba/ or /ta/. Just as there is no /ba/ or /ta/ ‘out there’, so there is no London.<sup>10</sup>

A second difficulty is that natural languages do not seem to have anything like what philosophers and some others call “proper names” – nouns that ‘directly’ refer to a single entity – or rigidly referring general terms such as “water.” Languages (the languages individuals have in their heads) do have