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978-1-107-01637-8 - The Science of Language: Interviews with James McGilvray

Noam Chomsky

Excerpt

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Introduction

While this book will be of interest to the specialist, it is intended for a general audience. The title, *The Science of Language*, might appear daunting, but Professor Chomsky's contributions to the interview can be understood by all and – where readers might want some additional information or aid in understanding why Chomsky adopts the unusual views that he does – I provide ample explanations. However, some might still ask why they should be interested in the science of language at all, and in Chomsky's views of it in particular.

A recent (January 2010) PBS series called *The Human Spark* starring Alan Alda explored the question of what makes modern humans distinctive. After all, there have been humanoid creatures around for hundreds of thousands of years, but it was only relatively recently in evolutionary time – on a reasonable guess, somewhere between fifty thousand and a hundred thousand years ago – that humans began to display the remarkable cognitive powers that so clearly distinguish us from chimps and other 'higher' apes. We form non-kin communities that do not involve direct contact or acquaintance with others; we have science and mathematics and seek ultimate explanations, sometimes in the form of religions; we think about things both temporally and spatially distant, and produce and enjoy fiction and fantasy; we organize and plan for the future in ways that go beyond anything other creatures can manage; we speculate; we draw and employ other forms of artistic media; we produce and enjoy music; we see connections between distant events and seek explanations that will prove reliable and yield good policies; and so on. The conclusion the PBS series reached was that the introduction of language must surely be among the most important factors explaining how these remarkable capacities came to us.

That conclusion makes sense on independent grounds. You cannot speculate and think about matters far and near unless you have some way of constructing an unlimited number of complex thoughts that you can detach from current circumstances and use to range over arbitrary times and circumstances. Language gives you this capacity. You cannot organize and construct projects involving cooperation between individuals unless you have a way of

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planning well into the future, providing for contingencies, and assigning specific roles; language gives you that. You cannot do science without seeking basic explanations and using mathematics and ways of quantifying exactly; there is good reason to think that language gives you at least the capacity to count things and measures. And so on. Music might be independent of language; it is not clear. However, it is obvious that neither music nor other forms of art can provide all the cognitive benefits that language can, and make these benefits available to all humans who develop language at all. Language is the default way of saying what a work of art expresses. It is the primary expressive – and creative – medium.

So one reason to be interested in the science of language is because it tells us what natural languages are, what gives us, but no other creatures, language, and what explains the introduction of language and the beginnings of our remarkable cognitive capacities.

It is particularly important to understand Chomsky's views on these matters, not only because he virtually created the modern science of language by himself and ever since has influenced the work of many of the individuals who have increasingly improved this science, but because of what he and colleagues have discovered about language – particularly in recent years – and the implications of these discoveries for topics of broad interest, topics that Chomsky takes up in his famous political work and his less known but important philosophical works. For Chomsky, the science of language is an objective natural science that treats language as a biologically based system that evolved in a single individual and was genetically transmitted to progeny. Evolution of the sort he describes – very different from the usual gradualist stories about evolution of complex systems – nicely explains how language came about. And there are important implications of the fact that language is a 'natural object,' and that it came about by means of the kind of evolution Chomsky describes.

One implication of the idea that the evolutionary introduction of language may have made us the distinctive species we are is that it – perhaps by itself – explains what is human about human nature. If this is so, there is a naturalistic – not religious, and not merely speculative – account of our distinctiveness and its origins. If so, and assuming that a creature's fundamental needs are based on its nature, we might be able to find a naturalistic basis for views about the good life for this kind of creature. That topic is taken up to an extent in the discussion, but only tentatively – however tantalizing the prospect of a scientific basis for the good life it might be: Chomsky the scientist wants (as any scientist should) a good theory of human nature in place before he is willing to be firm in his commitments. That theory is not yet in place. However, the issue of what the good life is for human beings is important enough to need discussion, at least, and tentative answers.

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The core of this volume is a transcript of four discussion/interview sessions I enjoyed with Noam Chomsky in 2004. In January of 2009, I had a chance to do a follow-up interview on the perfection of the language faculty – a prominent theme in Chomsky's Minimalist Program. The relevant parts of the transcript of that 2009 interview are placed in appropriate places in the transcript of our 2004 sessions.

Professor Chomsky's contributions required very little editing – generally, eliminating pre- and post-interview conversation, removing a few false starts, and putting in references. Those changes are not indicated. Where the transcript of his comments seemed to me that they might require some clarification for the general reader, I inserted phrases and words in square brackets. The transcript of my questions to Chomsky and of my contributions to discussion required a bit more editing. I did not indicate the changes I made to them.

The interview sessions were informal, more like discussions between friends who agree on a great deal and want to explore the implications of what has come to be called “biolinguistics” than a formal interview. In part because of that, discussion sometimes jumped from one topic to another and reintroduced themes in different contexts. To aid readers who are unfamiliar or less familiar with the issues and would prefer greater continuity and organization, I rearranged some parts of the transcript and introduced two sections that organize the discussion around two major topics, the science of language and mind, and the study of human nature. Within each, we pursued various coherent argument threads. Each of these is organized in a titled chapter. I eliminated some repetition, but some remains. Where it remains it can, I think, be justified because it places a theme discussed earlier in a new context where we can explore its relevance to a different issue.

I also tried to provide another kind of aid. Readers are likely to come to the text with different assumptions about language and its study, and with varying degrees of background in linguistics and Chomsky's understanding of the human mind. In an attempt to help those who want some guidance as they read, I placed in the main text several pointers that look like this [C]. They indicate that there are explications and commentaries in a separate section of the book. These are indexed by page number to the text. Where commentary and explication is extensive, however, I placed it in appendices under headings that indicate the issue(s) in question. Throughout, I tried to make comments and explications as useful as possible to the rather broad range of prior assumptions and backgrounds of those who might read this volume. Professor Chomsky reviewed the edited and commented text and made many suggestions. These led to changes and improvements. I am grateful for them all, but particularly grateful for those that led to improvements in my explications and appendices. For mistakes that remain, I am solely responsible.

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I am also grateful for discussions and exchanges of correspondence on related topics over several years with many others. Among these are Paul Pietroski, Terje Lohndal, Sue Dwyer, John Mikhail, Georges Rey, Anna Maria diSciullo, Cedric Boeckx, Rob Stainton, David Barner, Mark Baker, Sam Epstein, Norbert Hornstein, Lila Gleitman, Laura Petitto, Wolfram Hinzen, Matthias Mahlmann, Lisa Travis, and many others – plus too many students to mention, however much I would like to. I owe them all and thank them.

Thanks too to Jacqueline French for carefully reading and copy-editing the text and making many corrections; it proved to be a rather daunting task. I would also like to acknowledge partial financial support in the preparation of this volume from grants from the Social Sciences and Humanities Research Council of Canada.

The topics taken up in the discussions range widely and include human nature, morality and universality, science and common sense, the nature of language and its study, and evolution and Chomsky's views of it. Nevertheless, themes concerning the science of language and mind and their implications for theories of human nature and some social implications dominate. The 2004 interviews took place shortly after Chomsky's presentation at the 2004 Linguistic Society of America's annual meeting of a paper that has come to be known as the "Three Factors" paper. (The published version is available in *Linguistic Inquiry*; see Chomsky 2005a.) Considerable segments of the discussion centered on the important themes of that paper, a draft copy of which I had read before the interview. Readers might want to read that paper. I also suggest reading Marc Hauser, Tecumseh Fitch, and Chomsky's paper on the language faculty and its evolution in *Science* (Hauser, Chomsky & Fitch 2002). Some will find the later technical discussion of the theory of language in the *Linguistic Inquiry* paper a bit daunting, but the first parts of the paper are accessible to a general audience that is willing to read carefully. In any case, our discussion focused on the issues discussed in those accessible parts, and on their background and implications. Our discussions avoided the technical issues, except where they might prove crucial to clarifying Chomsky's still-unusual and often controversial views of language and mind and their study, and some implications of these views for understanding human nature and its implications for politics.

With an occasional exception when discussing a technical issue, Chomsky's remarks are accessible to a general audience while remaining interesting to specialists. I tried to make my contributions accessible too, aiming to make them understandable to the non-specialist undergraduate. Readers might wonder why I sometimes contrast Chomsky's views with those of philosophers, rather than linguists or (given the current emphasis on biolinguistics) biologists. The primary reason is that Chomsky often does so himself. He has little sympathy with much of what goes on in contemporary philosophy of

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mind and philosophy of language. Indicating just how and why he is critical provides insight into his views and into how he justifies them. It also ties his work in linguistics and the study of the human mind to more general philosophical and related themes that are likely to be of interest to – and within the background knowledge of – everyone.

Chomsky calls himself a rationalist, tying his views to a long tradition in philosophy and psychology (thought of as the study of mind) that included philosopher-scientists and philosophers such as Descartes, the Cambridge Platonists in England, and some Romantics (Wilhelm von Humboldt and A.W. Schlegel, among others). Rationalism as understood by Chomsky consists of a set of proposals – a procedure, strategy, or methodology – for studying the human mind, and language in particular. The methodology is not chosen at random; it is adopted because rationalists believe that it offers the best way to proceed in constructing a naturalistic science of mind and language, a science that while it differs from physics and chemistry in its subject matter is, like them, a natural science.

Rationalists in their study of language and mind try to take seriously two sets of observations about language and its use, and about how language and other human mental capacities develop in the infant and child. One is called the “poverty of the stimulus” observations and applies to all cognitive domains such as vision, audition, facial and object recognition, and so on. The other, the “creative aspect of language use,” is specific to language. The poverty of the stimulus observations concerning language in particular are these: children develop a language automatically, with little or no training, in conditions where data are sometimes limited and often corrupt, and in accord with much the same agenda across the human population without regard to general intelligence and access to schooling. Because of these facts, rationalists assume that it is reasonable to believe that much of the human mind’s structure and “content” must somehow be fixed or innate. Beginning around a century and a half or so ago, and with increasing evidence of genomic, physical, chemical, and computational constraints on the ways in which organisms develop and grow, along with improving sciences of the ways in which these constraints affect organic growth, rationalists have come to assume that the best way to make sense of how the mind develops is by assuming that the mind’s various parts or ‘organs’ grow or develop in accord with agendas fixed by the human genome and by other constraints on development. That is, they have come to see that the best way to make sense of the traditional rationalist’s view that human mental powers develop under poverty of the stimulus conditions is to assume that they must be innate and that they grow into the forms that they do because of biological, physical, and computational constraints on their development. That explains why traditional rationalist study of the language and its growth has come to be called “biolinguistics.”

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As for the creative aspect of language use observations, they are that human language use appears to have no causal antecedents (one can think or say anything, without regard to circumstances outside the body or in the head), that the use of language yields an indefinitely large number of structured complexes of concepts (those expressed by sentences) with regard to any context, and yet that the sentences produced on an occasion are almost always appropriate to the circumstances (discourse or other) to which they ‘speak.’ Traditional rationalists generally assumed that these observations indicated that humans must be seen as free in their thought, deliberations, and actions. Current rationalists agree, but because they believe that languages are best understood as computational systems embodied as biologically based organs in the mind/brain, they must also try to make sense of how a deterministic system in the head can play a role in yielding such obviously creative, novel, and coherent use by people. They do so by assuming that the core computational language system is “modular” and operates more or less autonomously and yet can “generate” an indefinitely large number of structured ways of speaking, thinking, and understanding. Plausibly, this is the root of the flexibility of human cognitive powers: human minds can put together in structured forms any number of structured conceptual materials, each of which is discernibly distinct from all others. But along with these assumptions about the capacity of the computational system and what it affords its users, contemporary rationalists believe that the ways that these uniquely human resources are used are not determined by the computational system. The consequences of these assumptions are important. Because of them, it is reasonable to hold that humans really are free in the ways in which they use language, and also to hold that if one wants a natural science of language, the only way to get it is to focus entirely on the nature, development, and operations of a person’s “language organ,” *not* on the uses to which its resources are put as they appear in a person’s linguistic actions and behaviors. Because of this, the science of language is the science of an internal system: rationalists are *internalists*. In sum, then, rationalists now like those of the past are – because they take seriously the poverty and creativity observations – scientists of mind and language who are both nativist and internalist in their assumptions about how to proceed.

Rationalism contrasts with empiricism, which commits itself to minimizing commitments to innateness – or at least, language-specific innateness – in the study of language and related “higher cognitive capacities,” holding instead that much of the cognitive structure and “content” of the human mind results primarily from ‘experience’ and some kind of generalized “learning” mechanism. Empiricists are anti-nativist and committed to including the world and relations to it in the study of mind. They, unlike rationalists, believe that a science of language should in some measure be a science of linguistic

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behavior and how the mind relates to the world outside the head. Their assumptions and the methodology for the study of mind that they adopt dominate current research in psychology, philosophy, and related ‘cognitive sciences.’ For them, language tends to be seen as a human invention, an institution to which the young are inducted by subjecting them to training procedures so that they adopt the ‘rules of use’ practiced by a community of speakers. They assume that the study of language must proceed on anti-nativist and externalist assumptions.

Obviously, the different assumptions of rationalists and empiricists lead them to devote research to very different subject matters, and they adopt very different views about the prospects of treating language as a “natural object,” to use Chomsky’s terminology. I discuss rationalism and empiricism in a bit of detail in Appendix III. For more detail, see Chomsky’s *Cartesian Linguistics* (particularly the 2009 Cambridge third edition, which has an introduction on the topic written by me) and Norbert Hornstein’s chapter in *The Cambridge Companion to Chomsky* (2005). Readers are warned that “empiricism” by no means entails “empirical,” any more than “rationalist” entails “non-empirical.” Rationalists aim toward being no less empirical scientists than do chemists or biologists. Indeed, Chomsky has long insisted that the only methodology appropriate for developing a theory of language is that which is also employed in chemistry and physics. The study of language differs only in subject matter and experimental techniques from other naturalistic scientific endeavors. That this is the appropriate approach is demonstrated by its success – by progress in explanatory and descriptive adequacy, formal and explicit statement, simplicity, objectivity, and accommodation to other sciences (here, primarily biology). For some discussion, see McGilvray (forthcoming).

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Part I

The science of language and mind

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