THE 'LANGUAGE INSTINCT' DEBATE

REVISED EDITION

'the definitive response to Pinker's book and Chomskyan nativism in general'
DONALD CARROLL, *LANGUSE* LIST

GEOFFREY SAMPSON
with a foreword by PAUL M. POSTAL

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Suite 704
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www.continuumbooks.com

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

ISBN 978-0-8264-7385-1 (paperback)

Library of Congress Cataloging-in-Publication Data
A catalogue record for this book is available from the Library of Congress

Designed and typeset by Ben Cracknell Studios
Printed in Great Britain by the MPG Books Group

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For Daniel, Julia and Rebecca

Foreword

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More than thirty-five years ago, Noam Chomsky, then and until his recent retirement a Professor of Linguistics at the Massachusetts Institute of Technology, developed a highly innovative view of the process by which children learn their first language. This attributed the key role in the phenomenon to an innate, biologically determined system specific to human beings which by assumption provides a normal child with a vast body of a priori knowledge about the nature of any human language. He sometimes referred to this system as a faculty of language, sometimes as a linguistic organ. In many publications by Chomsky and those he has influenced since then, the idea that there is a language-specific innate basis for first language learning has been very successfully promulgated. It is, I suspect, accurate that this view is now dominant both in linguistics proper and in adjacent fields which concern themselves with knowledge of language. Let us call the relevant claim the *innateness position*.

The present work by Geoffrey Sampson is an enlarged and updated version of one originally published in Great Britain seven years ago. Its importance for American audiences is that it represents an extensive and thorough argument for rejecting the innateness position, which he regards as entirely mistaken. For Sampson, children learn their first language by a process of trial and error hypothesis formation based on their experience with language data made available in the linguistic community into which they are born combined with the skills provided by general human abilities. There is, in Sampson's view, no specialized linguistic faculty or brain component specific to language.

Given these facts, one might assume that Sampson's work is simply one element of one side of an ongoing debate about the scientific validity of the innateness position about language. While that is true in one (somewhat abstract) sense, it is remarkable that in another, the debate seems notably unjoined. Looking through work by noted innateness-position supporters published since 1997 including Chomsky (2000a, 2000b, 2002), Smith (1999), Jackendoff (2002), Culicover (1999), Anderson and Lightfoot (2002), Antony and Hornstein (2003), McGilvray (1999) and Fromkin *et al.* (2000), all of which expound Chomsky's innateness position at nontrivial length, one finds no reference to Sampson's work. It is as if it did not exist (an exception is Smith, 2001). Sampson's volume,

on the other hand, cites the literature of the innateness position extensively and analyzes its various argumentative strands in detail.

While I am myself an agnostic on the questions at issue, clearly the documentation asymmetry just noted should be disquieting to anyone interested in the issue. Questions as important and fundamental to the psychology of language as those surrounding the innateness position should be explored as fully and fairly as possible. If the innateness position is both correct and as strongly supported as its defenders have at times claimed, see (1) below, it should not be difficult to effectively answer Sampson's critique. And if it is not correct, then surely that critique must, at a minimum, point to the need for its defenders to strengthen the argumentation and factual support for it.

These remarks should bring out that there are two different aspects of the dispute in question. Most fundamentally, there are questions of the ultimate truth of the innateness position or of any alternative conflicting with it. But truth in scientific terms is not directly given in any simple way. One needs to ask for particular scientific hypotheses not only, grandly, whether they are true, but in more limited and procedural terms, what the currently available evidence for them is. A hypothesis might ultimately be true without there being enough or even any evidence at a certain point which could be taken to scientifically justify it, a hypothesis might be false without it being possible to show that definitively at a given historical point. Thus while the questions which need to be answered about the innateness position include, of course, whether it is true, the only viable way to achieve a reasoned judgment about that must involve a consideration of the degree of scientific evidence now available for (or against) it. My suspicion, contrary to the innateness position's defenders, is that the issue is far from closed in favor of it. And, correspondingly, my suspicion, contrary to the views which Sampson expresses in the following pages, is that the issue is by no means closed against it either.

What I do not doubt is that any reader interested in the questions will benefit greatly from the present volume's study of the matter, which is at the very least a healthy antidote to what is, I am afraid, an often disturbingly unserious, indeed irresponsible approach to the innateness position on the part of its major advocate. Consider for example these revealing remarks found in Chomsky's year 2000 monograph *The Architecture of Language*, page 50:

(1) There is a huge literature arguing against the innateness of language; there's nothing defending the thesis. So the debate is kind of funny in that it is one-sided. Lots of people reject the proposal that language is innate but nobody ever answers them. The reason why nobody answers is that the arguments make no sense. There's no way to answer them. To say that 'language is not innate' is to say that there is no difference between my granddaughter, a rock and a rabbit. In other words, if you take a rock, a rabbit and my granddaughter and put them in a community where people are talking English, they'll all learn English. If people believe that, then they believe that language is not innate. If they believe that there is a difference between my granddaughter, a rabbit and a rock, then they believe that language is

> innate. So people who are proposing that there is something debatable about the assumption that language is innate are just confused. So deeply confused that there is no way of answering their arguments.

These statements are not scientific comments but rather the analog of awful, partisan political discourse. Even their purported factual sociological assumptions are grotesquely untrue. Contrary to the unsupported 'nobody ever answers them', serious defenders of the innateness position of course do defend the position. So e.g. Hornstein and Lightfoot (1981) argue both for innateness position and against alternatives, as does Smith (1999, e.g. 40–42), Culicover (1997: 4–10). Pinker (1995), which Sampson's critique is extensively devoted to answering, also deals with the question. Notably, Jackendoff (1997: 5) states: 'The standard lore outside the linguistics community has it that this capacity [for language: PMP] is simply general-purpose intelligence of a very simple sort. This lore is remarkably persuasive and persistent, and over and over it finds its way into psychological theories of language. Chomsky's (1959) response to Skinner (1957) and Pinker and Prince's (1988) to Rumelhart and McClelland (1986) are detailed attempts to dispel it.'

Most outrageous about claim (1) is that Chomsky himself has, of course, repeatedly argued the matter in favor of the innateness position; see e.g. Chomsky (1968–9; 1972; 1975; 1979; 1980, e.g. 40–44; 1986: 3–14; 1988: 15–17, 2000b: e.g. 117–133). One need consider only the following quote from his 1975 *Reflections on Language* volume, page 13:

> (2) I would now like to consider the so-called "innateness hypothesis," to identify some elements in it that are or should be controversial, and to sketch some of the problems that arise as we try to resolve the controversy.

Hence Chomsky's groundless claim that to either disagree with his view or even think there is something to debate is a sign of confusion smears not only opponents of his position but also some of its most illustrious advocates, and, interpreted literally, embodies an accusation that he is himself confused.

Chomsky's remarks in (1) in favor of the innateness position are scientifically contentless propaganda because those who, like Geoffrey Sampson, dispute the innateness position argue that first language learning depends on general human intelligence and capabilities, not on some specialized biological structure dedicated to language. Since rocks and rabbits lack general human attributes *of every sort*, any failure on their part to learn languages when (hypothetically) exposed to the same linguistic experience as a human child would, necessarily, entirely fail to distinguish the hypotheses at issue.

Moreover, rather than raise issues about others' confusion, as Chomsky would have the reader believe, his offensive comments evidently really raise a key issue about his own position. If the case for the innateness position is strong and well-supported factually, why, after more than three decades of propounding it, is he advancing worthless junk like (1) as part of its putative justification? One should not, incidentally, think that pro-innateness-position material of as low a level as (1) is only *recent* in Chomsky's writings (attributable perhaps to some end-of-career

decline). Chomsky's 1981 article 'On the Representation of Form and Function', page 8 for example, states:

> (3) The telephone exchange, for example, has 'heard' much more English than any of us, but lacking the principles of universal grammar (inter alia) it develops no grammar of English as part of its internal structure.

This remark is of the same nonsensical order as (1) as far as supporting the innateness position. For, obviously, the inanimate telephone system having, unlike human children, no sense of hearing, has heard no English at all and, more importantly, lacks human intelligence as much as it could lack any putative linguistic faculty. Failure of language acquisition on the part of that electromechanical system could thus not have the slightest bearing on the validity of the innateness position.

What I hope the reader interested in questions of the validity of the innateness position will, minimally, take from these brief remarks about the claims in (1) is a further reason to consult Professor Sampson's serious and well-argued volume. For it is clear that, contrary to (1), the issue Sampson treats here is alive, and the attempt to dismiss criticisms like his without facing them certainly cannot begin to show any confusion or inadequacy in opposition to the innateness position. But, inevitably, the sheer ineptness of remarks like those of (1) must raise the suspicion that the innateness position has achieved its dominant status for reasons at least in part independent of any extant arguments or evidence in its favor.

Be that as it may, I can assure the reader that Professor Sampson defends his view of the dispute with argument and evidence of the sort one expects from serious scholarship.

Scarsdale, New York

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Preface

It is gratifying to find that this book has been sufficiently successful for a new edition to be called for, not many years after its original publication. The gap in years is short; but a change of millennium has intervened, and this has coincided with two fundamental changes in the terms of the debate.

One of these stems from the completion in 2001 of the sequencing of the human genome, with the finding that we seem to have far fewer genes than previously expected. Steven Pinker has discussed this surprise (in *The Blank Slate*, pp. 75–8), arguing, rightly, that the interactions between genes are so complex and so little understood that we could not have put even an approximate figure on the total number of genes required to support any particular model of human nature. Quite correct; but there is a clear tension, at least, between a theory which says that human life is genetically determined in much greater detail than traditionally believed, and a discovery that the human genome contains much less information than had been thought. That tension means that 21st-century readers are likely to approach the 'language instinct' idea with greater initial scepticism than seemed to be usual in the late twentieth century. This book will show that their scepticism is abundantly justified.

The other large change, which has been under way for decades but reached a tipping point about the turn of the millennium, has been the increasing accessibility of quantities of concrete data on how people at large use language in real life. It is sobering to realize how far both sides of the language instinct debate, less than a decade ago, depended on anecdotal evidence about how we speak (or write). The British National Corpus, currently the fullest computerized sample of any of the world's national languages, was published while I was working on the first edition of this book, too late for me to incorporate it into my research then. The first web search engine went online in the same year, and it was some time before any of us took stock of what that technology could contribute to the study of language. The present edition of my book includes a new chapter which uses some of these newly-available resources in order to move the debate forward.

Apart from the new chapter, this edition contains many passages, from a few words up to new chapter-sections, that discuss relevant scientific findings which have emerged since the first edition, or respond to objections made by critics of that edition.

So many people have made interesting comments on the book that it is impossible for me now to identify everyone who deserves a word of thanks; but those who have contributed to one or both editions by discussing the ideas with

me and/or offering advice or information include Gerald Gazdar, Peter Jones, Fred Karlsson, David Mora-Marin, John Ohala, Geoffrey Pullum, Matthew Saxton, Ethan Taub, and the late Larry Trask. They bear no responsibility for the shortcomings of the book, and I ask those whose names I have overlooked to excuse me.

I am grateful to the editors and publisher of *Philosophical Papers* for permission to reprint material that first appeared in vol. 18 of that journal; and to Mouton de Gruyter for permission to reprint material that first appeared in vol. 19 of *The Linguistic Review*.

Readers interested in the research background from which this book has emerged may care to visit my website (www.grsampson.net).

Sussex, September 2004

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1 Culture or Biology?

A challenge to common sense

This book is written in order to establish that human beings have no language instinct. The idea that we are born with complex features of linguistic structure encoded in our genes is a myth. The English language, and other languages, are institutions like country dancing or the game of cricket: cultural creations which individuals may learn during their lifetimes, if they happen to be born into the appropriate cultures, but to which no one is innately predisposed.

To some readers, this may sound like banal common sense. A language is a far more complicated thing than a game, but both might seem to be clear examples of cultural institutions. Others will know that the contrary point of view has been powerfully expressed in recent years. My title deliberately echoes that of a 1994 book by the Canadian Steven Pinker: *The Language Instinct*. Pinker believes that languages such as English are not at all like country dancing or cricket, but more like a bird's nest-building or dogs' habit of burying bones – behaviour programmed into the respective organisms' DNA. Readers to whom that idea is novel will immediately see gross differences which might seem to render an analogy between speaking English and nest-building obviously unreasonable, but do not worry: Pinker is well aware of those differences, his point of view is certainly not just silly. Pinker's *The Language Instinct* is a well-argued and influential case for believing that the appearances are misleading. English and other languages might look like purely cultural creations, but they really are not. Furthermore, Pinker is no lone intellectual eccentric. He is the most visible and influential representative of a point of view about language, and about human cognition more broadly, which has been winning adherents for some forty years now. Whether the reader likes it or not, very many people are reading Pinker and finding him convincing.

So it is worth taking the trouble to demonstrate that Pinker is wrong. There is no language instinct. Human beings are not the kind of creatures which Pinker takes us to be.

For the first edition of this book, I used the title *Educating Eve*, as an allusion to Willy Russell's play *Educating Rita* (first performed in 1980, and turned three

years later into an excellent film with Julie Walters as Rita and Michael Caine as Frank). For this enlarged and updated edition, that allusion was deemed unduly mysterious (and my title had the further drawback, which I could not have anticipated, that it was simultaneously used as the title of a pornographic film). Nevertheless, the story of *Educating Rita* offers a useful metaphor for the point of view about human nature which is at issue here. Many readers will know the plot of Russell's play. Rita is a naïve and ignorant young Liverpool hairdresser, who finds her life unsatisfying and joins the Open University. The tutor assigned to her is Frank, a past-it don more interested in drinking than teaching, who tries to duck out of the job – but Rita insists. And so, slowly and uncertainly, Rita begins to climb away from her initial ignorance, taking the active intellectual initiatives and often taking them badly, but learning almost despite Frank from his fairly passive responses. As the relationship develops Frank becomes charmed and attracted; but after a while the tables are turned, because Rita goes on climbing intellectually, past Frank's level, until she has no real use for his teaching even if he wants to offer it. All she can eventually do to show she has a soft spot for the old wreck is to smarten him up with a haircut.

Educating Rita makes a vivid metaphor for the growth of human knowledge. We are born knowing nothing – we do not have, say, the beaver's instinctive knowledge of how to build a strong dam from branches and mud to raise the water level above his lodge entrance – but we have a natural curiosity, a propensity to come up with new ideas and put questions to Nature by practical experiment, so that Nature has to give us answers whether she will or no. And although many ideas are duds, experiment winnows away the mistaken ideas and leaves us the good ones, so knowledge grows unsteadily but cumulatively to such effect that, many generations ago, we largely left behind Nature as our first human ancestors knew it. If a 21st-century Westerner is concerned with winning new knowledge, it is more likely to be knowledge about how to improve the efficiency of a car engine or about what sort of films will attract audiences next year – questions that have meaning only within a world created by the earlier growth of human knowledge – rather than, say, knowledge about what kinds of fruit are good to eat.

We are still fond of Nature. It is pleasant to prune the roses and mow the lawn on days off from the office; but, for many of us, that is as far as it goes.

Willy Russell did not write his play as an allegory, and I am sure the reader can find aspects of the developing human relationship between his Frank and Rita that fail to fit the metaphor. 'Any analogy will break down eventually', as Rita herself points out. Nevertheless, at a simple level the play does offer a memorable image for the way that mankind can learn anything, starting from nothing. Beavers are born knowing how to make beaver dams, and generation after generation they make them in the same way. If beavers found themselves living in grassland lacking the branches and tree trunks needed for a dam, or if new predators appeared which could swim underwater to get into beaver lodges (so that safety depended on raising habitations above ground level), then beavers would be out of luck, short of biological mutation. Because people develop knowledge from scratch rather than being born with built-in knowledge, we can

adapt to different circumstances. Put humans in the Arctic, and they will invent the igloo. Put them in southern Africa, and they will invent the rondavel. Put them anywhere on Earth, and wait a while, and in time they will invent the Apollo rocket and the Lunar Excursion Module, or the Apple Macintosh, or other new things equally unexpected and marvellous.

The story of Rita and Frank makes a good metaphor, at least, for one view of the growth of human knowledge – a view that often passes for uncontroversial common sense. But my reason for writing this book is that, nowadays, not only Steven Pinker but quite a lot of other people are saying that things are not like that at all. At the turn of the millennium, there is a powerful current of intellectual opinion which holds that human knowledge consists of fixed biological instinct, like the beaver's knowledge of dam building. We do not really invent new knowledge, and we are not as intellectually adaptable as we like to think. Our instinctive knowledge base is richer, and lets us do a greater variety of things, than the beaver's; but it is just as biologically determined, so that if our environment changed in a way that called for new thinking, we would be as stuck as the beaver. Willy Russell got it wrong. Rita really knew all that university stuff before she met Frank; in fact she was born knowing it.

Stated briefly and baldly, this concept of human knowledge as biological instinct sounds almost mad. It seems so obvious that human culture changes, in a way that animals' lives hardly ever do. It seems self-evident that many of us in the 21st-century West know about all kinds of ideas that were simply unknown to our forefathers just a few generations back, and often remain unknown to tribesmen living remote from our civilization today. Of course Pinker and others who argue that knowledge is instinct have answers to those points. They are as aware of the obvious facts of life as anyone else, but they have subtle reasons for urging that we have drawn the wrong conclusions from the facts.

Nevertheless, I believe the common-sense reaction is essentially correct. I am sure the idea of human knowledge as biologically built-in is quite wrong. The people who advocate the idea have arguments, and the arguments must be examined and countered – we cannot just dismiss out of hand a point of view which has succeeded in making converts out of a large proportion of the thinking public. But, if one does scrutinize the arguments carefully, they are easy to refute.

That is what this book is for. I have written it to reassert the common-sense view of human knowledge. Willy Russell got it right. Rita knew nothing to start with. And nor did our earliest human forefathers, the people who began the long process of cultural development of which we are the beneficiaries today. The name Eve in my original title represented those first human ancestors. (If you wonder why I chose Eve rather than Adam, it was in order to focus on a biological rather than religious concept of human origins; for scientific reasons that will become apparent in a later chapter, the name Eve has special resonance in the context of human evolution.) What Eve and her present-day descendants such as Rita, you, and I inherit is not knowledge but the ability to gain knowledge, by taking initiatives in an environment which may be passive, but which cannot help showing whether our guesses are right or wrong when we try the experiment.

Language and instinct

The idea that knowledge is biologically built-in or native to the human mind is called 'nativism'. Nativism is not a doctrine about language exclusively – it relates to many aspects of human cognition; but, for present-day nativists, language is a specially important phenomenon. Indeed, language is crucial for both sides of the debate. To someone like myself who sees human knowledge as a cultural product, the outcome of many generations of trial-and-error experimentation, the languages that all human societies possess are cultural developments, just as their agricultural techniques or their beliefs about astronomy are; but the first languages were particularly significant cultural innovations, because they changed the process of getting knowledge from an individual to a communal activity. A newborn baby today is as devoid of inborn knowledge as were our first human ancestors; but, while any knowledge they gained was gained through their own testing of their own guesses, we can short-circuit this slow and uncertain process for the benefit of contemporary children. The baby has only the same resources which Eve possessed to try to make sense of his environment; but, once he succeeds in using those resources to master the complex system of behaviour patterns that we call a language, his elders can then simply *give* him the end results of many prior generations of painful knowledge-winning. We can use a language to teach the young, informally or in schools. Succeeding generations can continue the direct process of guessing and experimentation where their elders left off, instead of each individual having to go back to square one and start again.

The nativists see language quite differently. They tend to speak of 'language', rather than 'a language' or 'languages', because they think of the diversity of the world's tongues as a fairly superficial matter masking an underlying unity. Human language, for the nativists, is a sort of biologically inherited coding system for our biologically inherited knowledge base.

But, in addition, they say that language offers the clearest kinds of *evidence* in favour of this nativist picture of the human mind. Turn-of-the-millennium nativism is a scientific theory, not a philosophical matter of pure conceptual analysis. The nativists claim that if we look at the observable facts with an unprejudiced eye, we are bound to concede that biologically inherited knowledge is the only reasonable explanation; and, overwhelmingly, the observable facts they point to are facts about language, about the structures of human language and about how children acquire their mother tongue. They argue that small children are too good at learning language to begin it from scratch – it must be that they know a lot about it before they start. They say that the various languages of the world are too similar to be freely developed cultural constructs: their structural framework must be fixed by our biologically inherited knowledge of language.

The nativists make claims about the biological fixity of all sorts of human cognitive activity, including things like the graphic arts where language scarcely seems to play any role. But language is so overwhelmingly dominant among the categories of evidence cited in support of contemporary nativism that it

makes sense to use the term 'linguistic nativism' for the movement that revived nativist conceptions of Man in the closing years of the last century.

I call this movement a revival, because nativism is a point of view with very deep roots in Western thought.* The first nativist was Plato; and in the field of intellectual name-dropping no name resounds with a louder clang than his. Most academics know Alfred North Whitehead's remark about the history of European thought being 'a series of footnotes to Plato'. More than two millennia before Darwin, Plato naturally did not think in terms of knowledge being implanted in human minds through biological evolution (he thought our immortal souls remembered things from a previous existence in a more perfect world than this one); but Plato was quite clear that knowledge is innate in children born into this imperfect world. Not some knowledge: all our knowledge. There is no true learning; 'what we call learning is really just recollection.'

In modern times, the seventeenth-century French thinker René Descartes advocated a very similar picture, though from a Christian perspective: our ideas were not remembered from a former life, they were present in the mind of a child within its mother's womb because God put them there. Descartes was somewhat less extreme than Plato about the extent of our innate intellectual endowment: 'all those [ideas] which involve no affirmation or negation are innate in us', in other words we do not actually begin with a knowledge of what is true and what is false, but we begin with a kind of menu of all possible propositions. The only way that experience after birth comes in is by filling in 'true' or 'false' against the various items on the menu. 'Innate proposition no. 2597923, *Oxford won the Boat Race in 1939*: postnatal experience shows that this one is FALSE, it was Cambridge; innate proposition no. 10481387, *Initial array elements in C are indexed by zero*: postnatal experience confirms this as TRUE'; and so on, and on . . . Plato, on the other hand, would have had to claim that I knew from birth that Cambridge won in 1939 and C arrays start from zero. He must say that: I certainly know these things now, and what we call learning is really just recollection. (Incidentally, I decided to be kind to Plato by picking a Boat Race date earlier than my own birth: his picture of innate knowledge is problematic enough, without introducing the issue of innate precognition of the future.)

Of course, neither Plato nor Descartes supposed that tiny children were consciously aware of all these ideas they were supposed to be born with. If they had claimed *that*, then it really would have been impossible to take them seriously. But they agreed that the ideas were there even if a small child is not conscious of them. A baby before birth has the innate ideas in itself 'no less than adults have these ideas while they are not attending to them; the child does not acquire them later, on growing up', as Descartes put it; according to Plato: 'the truth about reality is always in our soul . . . and one must take courage and try to discover – that is, to recollect – what one doesn't happen to know, or (more correctly) remember, at the moment.' A newborn child, for Plato and Descartes, is like a very learned man who is asleep; the knowledge is in there all right, it just needs stirring up a bit before it is available for use.

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* Notes and references to quoted sources begin on p. 195.

Fans of these thinkers may feel I am being unfair to them by choosing such implausible illustrations as Boat Race results or the details of a programming language. But I am not being unfair at all: I am deliberately bringing home just how extraordinary a picture of human nature this is, if one takes these great names to mean what they certainly said. True, the specific examples of innate knowledge which Plato and Descartes themselves use as illustrations are very different in flavour from my examples. They discuss innate knowledge of the proposition that the diagonal of a square is $\sqrt{2}$ times the length of the side (Plato), or the proposition that God exists (Descartes), and of word concepts such as 'virtue' (Plato) or 'triangle' (Descartes). These are concepts from the realm of pure intellect, far removed from the messy inconsequentialities of everyday life, so we do not react with the same immediate response of 'Come off it, Plato, pull the other one' which is likely to greet a suggestion of innate knowledge of Boat Race results. A lot of us are not too sure about the basis of geometrical theorems, and we would much rather leave it to the Vicar to sort out theological questions. We vaguely feel that there may possibly be something to be said for a claim that *these* ideas are based on innate understanding rather than observable evidence.

But that is no defence of Plato or Descartes. What it means is that they were using highly untypical, relatively digestible examples to smuggle into our thinking a far more general and much less plausible account of human nature. Plato's uneducated slave who turns out, allegedly, to possess unconscious knowledge of the ratio of diagonal to side 'will behave in the same way with all geometrical knowledge, *and every other subject*'; according to Descartes, as quoted above, '*all* [propositions] are innate in us' (my italics in both cases). We do not have to believe this stuff, just because it was said centuries or millennia ago by immensely famous men.

The contrary point of view was put by Descartes' English contemporary John Locke.

> How comes [the mind] to be furnished? Whence comes it by that vast store which the busy and boundless fancy of man has painted on it with an almost endless variety? Whence has it all the materials of reason and knowledge? To this I answer, in one word, from *experience*.

We are born with minds capable of executing various operations and of reflecting on their own operations, and our mental operations include a faculty of 'busy and boundless fancy' – human beings are obviously not sticks or stones, which will never come up with any thoughts or knowledge no matter what 'experiences' impinge on them. But we do not have any particular ideas or knowledge built in.

> He that attentively considers the state of a *child*, at his first coming into the world, will have little reason to think him stored with . . . *ideas*, that are to be the matter of his future knowledge. It is by degrees he comes to be furnished with them.

This view, that only experience generates knowledge, is called 'empiricism' (from Greek *empeiria*, experience – nothing to do with empires!).

Locke's wording is perhaps slightly florid for modern tastes, but the substance of what he is saying here seems to be such clear common sense that one feels slightly surprised it ever needed saying. And, indeed, at least in the English-speaking world Locke's empiricist point of view has been broadly taken for granted during almost all of the 300 years since he wrote the passages quoted.

Plato's and Locke's contrasting concepts of human nature have tended to correlate with contrasting political ideals. Plato, in *The Republic*, advocated a somewhat horrifically authoritarian state. Locke founded not only the empiricist philosophy of mind but also the liberal theory of politics which became the accepted political ideal wherever English was spoken. Empiricism and liberal politics are linked by the idea that freedom to experiment is needed in situations where authoritative knowledge is not given in advance.

On politics there is always room for argument, but on the issue of where the child gets ideas and knowledge from, I find it hard to see Locke's opinion, as expressed in the quotations above, as just one point of view among others. Surely most people would see it as the default viewpoint, to be accepted unless there are strong reasons to doubt it; it would take a very subtle philosopher to call such truisms into question. But we have seen that history has more than once produced such subtle philosophers. (Locke's *Essay* is believed to have been written as a direct response to Descartes, though the point is controversial.) In our own time a new group of such thinkers has emerged and achieved influence.

The return of the native

Although, nowadays, the leading proponent of linguistic nativism is Steven Pinker, he is actually a relatively recent recruit to the movement. The man who initiated it was Noam Chomsky, recently retired from the Massachusetts Institute of Technology. Chomsky is now an elderly man, and his influential writings date back some decades; but Pinker, and other currently active nativists, rely heavily on those writings in building their own case – so we must begin by examining Chomsky's arguments for nativism. These arguments are still widely read, and carry as much weight today as any newly-produced publications.

Chomsky, born in 1928, began his professional career within the academic discipline of linguistics – his first book on that subject, *Syntactic Structures*, was published in 1957 – but he quickly, in a stream of further books, transformed his style of analysing language into a subject of far broader intellectual interest than academic linguistics had possessed previously.

Before Noam Chomsky, the scientific study of language was seen as a highly specialized affair, essentially a branch of social anthropology. (The first chair of linguistics in Britain was attached to an institute that had been founded to promote scholarly study of the peoples of the British Empire. In America, linguistic research was closely linked to ethnographic study of American Indian tribes.) Describing the languages of the world was like describing alien societies' marriage customs or religious beliefs, offering the lure of the exotic without much linkage with one's own life in 21st-century Britain or America; but at the

same time the intricate grammatical and phonetic detail found in any human language gave the study something of the same intellectually demanding character as legal training. Between them, these considerations ensured that the discipline remained a minority interest.

Those who pursued it did not doubt that they were studying an aspect of societies' cultural inheritance, so that where languages were not historically related to one another as descendants from a common ancestor language, they were liable to differ in any and every respect – there was no mechanism that could cause them to be similar. For linguistics scholars in the first two-thirds of the twentieth century, it was a public duty to emphasize the astonishing diversity of the world's languages. This was valuable, first, as a corrective to the Eurocentric assumption that our cultural norms were the only valid norms. Indigenous languages of other continents, which failed to reflect the intellectual categories of English or Latin, were not necessarily inferior as vehicles for thought – often, linguistic analysis showed them to express marvellously subtle intellectual distinctions unknown to the languages of Europe. Second, particularly following the horrors of Nazism, linguistics did society a service by making the point that culture and blood are independent spheres: the civilization and cognitive life which are the special glories of our species are uncoupled from the biological endowment which we mostly hold in common, but which creates limited differences with respect to skin colour or facial features.

Martin Joos in 1957 epitomized the received attitude to linguistic study in his own country as 'the American . . . tradition that languages could differ from each other without limit and in unpredictable ways'. British colleagues would have seen no reason to disagree.

Noam Chomsky completely changed this agenda. Rather than focusing on the differences between languages, he focused on what they have in common; and he argued that they have a lot in common – much more than can be explained as chance coincidence, or the result of similarities in the external circumstances facing societies which developed languages separately. The common features can only be explained, according to Chomsky, as reflecting innate linguistic knowledge which specifies in considerable detail what human language is like, and hence ensures that creatures endowed with this knowledge are capable of developing and using only languages that conform to the innate specifications. And if we consider the ability of small children to master their mother tongue, we see something quite different from the slow, plodding, sometimes unsuccessful learning that characterizes an older child's or adult's attempts to come to grips with a school subject or a body of knowledge needed for work. Any child born in (say) France seems to become a fluent French-speaker almost effortlessly at a young age, while a typical 13-year-old English schoolboy, try as he may, just does not get the knack of those genders and irregular verbs. Even if in due course he achieves an unusually good A-level result, it is quite unlikely that a Frenchman will ever mistake him for a compatriot.

It is as if a child no more has to 'learn' a first language, at a certain young age, than he has to 'learn' how to produce his first set of teeth, and then at a certain

later age how to replace his milk teeth with adult teeth. Rather, Chomsky said, 'grammar grows in the mind'.

The obvious objection to this idea is that if a child's mother tongue grows in his mind as teeth grow in his mouth, we would expect everyone to grow up speaking the same language. Or, if there were differences, they ought to correlate with other genetic differences – perhaps white men would speak 'white languages', yellow and black men speak 'yellow' and 'black' languages, or the like. But people do not all speak the same language, and language differences certainly do not depend on biological ancestry. A newborn English child, brought up in a Chinese environment by Chinese-speaking foster-parents or in a Xhosa environment by Xhosa-speaking foster-parents, will become a fluent Chinese or Xhosa speaker, not a fluent English speaker (and vice versa).

Chomsky accepted this, but for him it was not very important. The differences between English, Chinese and Xhosa are superficial details: the bulk of what is known by someone who speaks any one of these languages consists of a rich set of structural principles that are common to all three languages, and to every other language on Earth. Our innate knowledge of language is not so perfectly complete that it fixes all details of language and hence permits only one human language. The innate knowledge leaves some matters open, and those matters do have to be learned by experience after a child is born. Consequently, separate societies have developed conventional patterns of speech which differ with respect to these 'open' issues, and we call these different 'languages'. But it is a mistake to pay so much attention to the superficial differences that we fail to notice the common underlying features. It is really rather provincial of us to think of English, Xhosa, Chinese, and so forth as 'different languages'; if an extraterrestrial alien visited Earth, Chomsky suggested, he might well think of all human beings as speaking one language, though with local differences in vocabulary. According to Chomsky's picture of the human mind, biology prescribes that we shall speak language; but it leaves some details open, so that there is a range – a strictly limited range – of alternative conventions for certain aspects of speaking.

And what is true of language is true, as Chomsky saw it, for other aspects (probably all other aspects) of cognition.

Scientists strive to understand the natural world, by developing theories that yield reliable predictions about various aspects of observable reality. Sometimes a theory that seemed well established turns out to be wrong, so that the relevant community of scientists have to cast about to construct some theory more adequate to the full range of evidence; and sometimes a class of phenomena obstinately fails to yield to scientific explanation over a long period. We usually assume that these are temporary problems of insufficient time and effort. Our current understanding of some field may be disconfirmed by new data, but give us time and we will surely find an account that explains the unexpected anomaly. Perhaps nobody has ever yet come up with a satisfactory theory in another field – it must be an unusually complex domain, but sooner or later someone will develop a structure of scientific laws that cover it.

To Chomsky, this was a wrong way of looking at things. Scientific theories, like languages, are mental products, governed by our biology. Our genes do not