

H actually ran the program on a number of large pieces of English text, though from my point of view, it's the ability and the willingness to do this that is the motivation of learning Perl. H's Perl code takes all periods '.' to mark sentence breaks, and of course not all periods really do mark sentence breaks: the previous one earlier in this sentence does not, nor does the period after an abbreviation, most of the time—though the next one does, e.g. The task of writing a program that can distinguish sentence-final periods from all other periods is quite an interesting and challenging one.

I would have liked to have seen some examples that actually made a linguist sit up and say, 'Hey that's interesting'. Some could be extremely simple. With access (over the internet) to a list of phonemic representations of English, you could ask, what is the most common consonant in English? What is the most common noncoronal consonant? Does English have a dozen words with two adjacent nonhomorganic noncoronal obstruents? Which words appear adjacent to one another in text (e.g. *this too too solid flesh*), or if this does not seem serious enough, what prepositions are pied-piped in Mark Twain's *Tom Sawyer*, and under what conditions?

A few things jumped out at me as aspects of the book that seemed less than optimal. The actual Perl code is written in a sans serif font, something like Arial, but in many books of this genre, a font more like Courier is used, a nonproportional font which in some ways is easier for the eye to parse when it is trying to cope with a sequence of unfamiliar symbols. Advice is given, on p. 47, on how to make Perl code more readable to the human being, but it is by no means always taken to heart. The vital subject of concordances is brought up on p. 114, allowing the reader to be able to build word-lists from texts, but the technique that would allow the programmer to sort the words by frequency is not discussed anywhere in the book. That's the sort of thing that leads to the point I made earlier: buying one book is never enough.

There are some excellent Perl books on the market: *Sams teach yourself Perl in 21 days* is excellent, and *Perl core language* is a good reference for the beginner and intermediate Perl programmer. H's *Programming for linguists* is a worthwhile introductory book for linguists who want to learn Perl and are looking for a book with more of an eye towards linguists' concerns.

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LEMAY, LAURA; RICHARD COLBURN; and ROBERT KIESLING. 2002. *Sams teach yourself Perl in 21 days*. Indianapolis: Sams Publishing.

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The blank slate: The modern denial of human nature. By STEVEN PINKER. New York: Viking Press, 2002. Pp. 509. ISBN 0670031518. \$27.95.

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Humans come to behave and think in different ways from other species despite what might seem to be similar environmental experiences. The best example is language. Even the most dedicated and deranged pet owners who talk continuously to their pets fail miserably in getting their dog or cat to speak while even the most careless and neglectful parent almost always has a child who speaks normally. Children bring something to the language-learning environment that no other animal has. They seem to bring a set of language-specific constraints that creates a universal grammar and which greatly facilitates the language acquisition process. In his early writings Steven Pinker certainly embraces this point of view as well. He and Paul Bloom have

also advanced the additional argument that natural language should be seen as an adaptation selected for in the course of evolution.

P then took his nativist and evolutionary perspective for language and extended it to perception, cognition, and emotion (Pinker 1997). In *The blank slate* he further argues that most folks, both within and outside of the academy, don't get it and feel oddly beholden to the view of humans as having no intrinsic natures, containing nothing in their initial cognitive makeup that guides development or constrains the adult form. He sees this misconception as further reinforced by a mistaken dualism, 'the ghost in the machine', that allows the mind to escape any biological limits and by romantic and unrealistic notions of humans as 'noble savages' corrupted by the evils of society. Most centrally, however, P argues that views of humans having rich intrinsic natures are morally, socially, and politically acceptable. *The blank slate* is an attempt to convince the reader that it really is OK to be a nativist and an evolutionary psychologist without being a racist, supporting eugenics, or making a political statement. It is unfortunate that this extremely important central message may get lost by those who become sidetracked with concerns about the status of evolutionary psychology.

At the abstract level the evolutionary psychology view seems eminently reasonable. There is no magic line that says that organs and systems outside of the brain could evolve in ways that allow organisms to adapt to their niches, while those inside the brain could not. There is also no magic line that says that as one moves inward from the sensory transducers to 'higher' levels of processing there is a point at which structures and systems could not be adaptations. No one doubts that the eye evolved for picking up and processing light and indeed different organisms have quite different visual systems tailored for their niches, in some cases changing in their properties as they change their niches in development (e.g. Loew & Sillman 1993). The same is true for the ear, the nose, the tongue, and the skin. Moreover, the structures that first process the information coming in from those transducers are similarly clearly adaptations for the information they receive. It seems bizarre and arbitrary to assume that all adaptations would cease as that information is processed at higher and higher levels.

What is not at all obvious, however, is the detailed nature of the adaptations that govern our cognitive and emotional lives. Indeed, even for language, there is much more controversy around whether any of the universal structural properties of languages could have been predicted from even the most exhaustive analyses of the niches inhabited by pre- and postlinguistic hominids. Unlike thorns which clearly serve the function of protecting plants, or wings which aid flight, it is much more difficult to say how our human set of constraints on subadjacency relations are more adaptive than another variant that could have been built in instead. Indeed, even by some evolutionary accounts, such constraints may not have been differentially adaptive. Instead, they may be more like social conventions such as driving on a particular side of the road. Something had to be done to solve the coordination problem of communication, and so there was strong pressure for an arbitrary but consistent set of constraints on linguistic structures (cf. Lewis 1969). Which constraints in particular emerged may have been largely random. This point was acknowledged explicitly by Pinker and Bloom (1990), but some of the current enthusiasm for evolutionary psychology seems to forget just how modest its predictions might be.

The argument for language-specific innate architectural constraints is further aided by considering the problem of acquisition. We have a pretty good sense of what the infant receives as language-relevant input and it has been difficult to imagine successful language acquisition without built-in biases to prefer some kinds of linguistic structures and operations over others. Put differently, the space of psychologically natural languages is far smaller than the space of logically possible languages and language-specific constraints seem to be responsible for much of that narrowing of the space. So, in addition to evolutionary arguments for constraints that ease communication, there are arguments for similar constraints that aid acquisition.

Language is surely not the only complex mental ability that could have adaptive value and that is genetically constrained to have a certain form. Thought about number, morality, other minds, and perhaps even the living world might well be powerfully constrained too. But the argument is much harder to make in a convincing and detailed manner. In terms of acquisition

arguments, the class of relevant inputs is harder to specify. We can plausibly estimate the number and kinds of sentences a child might hear, but how do we estimate the number and kinds of numerical displays a child encounters or the number of morally laden situations, or the number of times the beliefs of others are made apparent in a situation? In addition, the apparatus of modern linguistic theory has enabled us to see much more deeply into the nature of the human faculty for language than into any other domain of cognition. Even in the rigorous domain of mathematics we have far less detail of the universal structural principles of intuitive mathematical knowledge. This lack of detail requires that we take on faith that other domains of our mental lives are just as likely to be distinct and richly articulated organs of thought as language.

In terms of evolutionary arguments, evolutionary psychology—the enterprise of making predictions about human behavior and thought processes on the basis of their adaptive value to humans in some earlier hunter-gatherer phase of human history—is immensely appealing but equally frustrating as a way to generate unambiguous and testable predictions. How, for example, has an evolutionary perspective helped us understand the human capacity for language? The relatively limited insight provided is made more dramatic when one considers the great value an evolutionary perspective adds to the understanding of the structure and function of the vertebrate kidney or heart (e.g. Smith 1953). It is one thing to embrace the idea of evolutionary psychology; it is quite another to be able to use it as an effective research tool for exploring the structure of the mind.

These difficulties with evolutionary psychology might seem to undercut P's book. Although there are tempting examples of behaviors and biases involving mating-choice strategies, disgusting things, phobias, and moral taboos, they pale by comparison with characterizations of universal grammar. Moreover, those characterizations of universal grammar arose not from evolutionary arguments or comparative analyses across species, but rather from the development of new ways of more formally describing the language capacity, ways that allowed us to see both universals and the need for constraints to aid acquisition. Those descriptions in turn motivated the idea of a language organ that is part of virtually every human's nature. Evolutionary arguments, to date, have not added much to an understanding of the language faculty, which is the best developed case of a cognitive instinct. But, even if evolutionary psychology at present remains overly speculative and ambiguous, that limitation does not detract from the central message of P's book: Mental organs, no matter how they arose, have no relation to political agendas and moral postures.

If humans are partially wired and predisposed to like kitsch art, to gang up on outsiders, or to use excessive threats to get their way, such predispositions in no way justify those actions or condone them. P makes this point so convincingly and vividly it makes one wonder how the alternative could have been so commonly embraced. After all, humans are also predisposed to choke on foods relative to other animals, but no one thinks this predisposition makes the act of choking any more desirable or acceptable. Universal cognitive and behavioral tendencies, while perhaps revealing some of our more unsavory dimensions, do not entail any shifts in moral philosophies. If those tendencies can be explained in evolutionary terms, such explanations in no way make them any more suspect. If they cannot be so explained, they still might be intrinsic to human nature and should be recognized as such.

A separate issue concerns individual and group differences that might also be part of people's natures, and here the discussion departs more radically from the case of language, where individual differences in syntactic ability have not been a major focus of study. People do differ from one another in ways partly predicted by their genes. Height, physical coordination, and body coloration are obvious examples. It seems likely that they also differ in kinds of intelligence, in emotionality, and in various manners of self-regulation. But again, these differences do not imply specific political agendas. Differences among people may even have unfortunate social consequences, but such consequences in no way mean that we should deny or avoid a science that attempts to uncover and document those differences. For every case where one could use scientific evidence of biological bases for differences as means to oppress people, there is a case where one could use that evidence to help people. P's message applies equally well to the case of biological bases for individual differences as it does for biological bases of universal human psychological capacities.

It is easy to get caught up in the frustrations of evolutionary psychology and lose sight of the bigger message of this book, which could have been written about nativism while making no commitments to evolutionary psychology at all. It is, after all, quite possible to reject evolutionary psychology and yet fervently believe in mental organs. Again, the study of language has made this clear. Chomsky, for example, is a staunch nativist who rejects evolutionary psychology. Thus, even if one thinks strategies such as reverse engineering and analyzing the lives of hunter-gatherers and of closely related species are not likely to yield a high-resolution view of the mind, one might still believe that mind is a collection of domain-specific organs each specialized for learning about and processing particular classes of information. P's message applies equally well for those antievolutionary nativists. If humans do have predispositions to act in certain ways in certain domains, those predispositions, in their own right, are orthogonal to political and moral issues. Those predispositions may be deplored or applauded or simply dealt with in a nonevaluative manner. The values we attach to cognitive instincts do not in any way bear on the values of knowing about the instincts themselves.

Unfortunately, many influential scholars construct an artificial connection between evolutionary psychology and nativism on the one hand and morality and politics on the other. This is one of the more depressing points that is made so convincingly by P and which shows why this book is necessary. Pick almost any aspect of humans that is emotionally loaded and claim that humans manifest that aspect in a genetically constrained way and one is sure to incur moral condemnation. One is similarly condemned in arguing for genetic bases for individual differences in emotionally loaded aspects of being human. If there are innate cognitive constraints on what we think is beautiful, sexy, or moral, there are great risks for those who discover such constraints. It is hard to get too political about the nuances of syntax that might be part of a universal grammar. Most of the rest of cognition and emotion is not so immune. The politicization and moralization of these areas of science is a great tragedy and is doing far more damage than empirical findings, whatever their message, could ever do. *The blank slate* is invaluable for alerting us to this danger.

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The handbook of discourse analysis. Ed. by DEBORAH SCHIFFRIN, DEBORAH TANNEN, and HEIDI E. HAMILTON. Oxford: Blackwell, 2001. Pp. xx, 851. ISBN 0631205950. \$124.95 (Hb).

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Part of Blackwell's series of reference works in linguistics, *The handbook of discourse analysis* offers an expansive view of a vast field. Two things are immediately striking to the reader: first, that discourse analysis is not a single area of research; and second, that the editors have had to make some hard choices about which aspects of discourse analysis to emphasize and which to exclude. Discourse has become increasingly recognized within linguistics as central to the structure, use,