John Watson, the founder in the 1920's of behavioristic psychology, boasted that if he were given an infant at random, he could train him "to become any type of specialist I might select -- doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors." His dismissal of anything inborn but a few raw feelings harked back to the philosophical empiricism of John Locke, who denied that the human mind came equipped with innate ideas; mind was a tabula rasa, a blank slate on which experience of the world would write messages. Watson's kind of behaviorism, amended by B. F. Skinner, dominated American psychology in the first half of the 20th century. The scientific community's reaction to the racism of the Nazis reinforced the doctrine; and events during the civil rights movement and the Vietnam years cautioned even evolutionary biologists about supposing that humans had been subjected to the kinds of forces that mold animal mind and behavior.

The logic of evolutionary theory, however, seemed inexorable. Humans are, after all, animals. No magic moment occurs when souls rain down on waiting primate bodies to wash away all signs of brute origin. In the 70's, E. O. Wilson developed this logic with the support of a wide range of animal studies and anthropological reports about societies still following traditional ways. On this foundation, he constructed sociobiology, which sought to explain basic human social behaviors and mental traits largely as preprogrammed products of evolutionary history. Mating preferences, emotional patterns, intelligence, even religious convictions became scientifically explicable.

The counterreaction was swift. The biologists Stephen Jay Gould and Richard Lewontin and the anthropologist Marshall Sahlins discovered more right-wing
politics than sound science lifting sociobiology to prominence. Wilson became the
target of harsh critical scrutiny and personal attack. Nonetheless, studies in the
evolutionary understanding of human nature have proliferated, spawning the
various theories that form the subdiscipline of evolutionary psychology. Much of
the still acrimonious dispute has congealed into this: Is the mind initially blank,
only scribbled on after birth by experience? Or does it also contain lessons already
written by ancient genes?

In "The Blank Slate: The Modern Denial of Human Nature," Steven Pinker -- a
psychologist at M.I.T. and author of several popular books on cognition and
linguistics -- attempts to shatter contemporary versions of the blank slate. To this
polemical task he brings an arsenal of scientific research, acute analysis and
pugnacious attitude. Bubbling beneath an affable charm, strong passions,
apparently simmering since graduate school, give some of his arguments a bitter
aftertaste.

Pinker sees human nature as largely inscribed by indelible genes. He marshals
evidence from empirical studies showing, for instance, that individuals living in
disparate cultures display the same repertory of emotional expressions. Angry
scowls, happy smiles, the arched eyebrow of disbelief, the wrinkled brow of
perplexity and scores of other facial signs are universal. They cannot have arisen
from a common cultural heritage but must, Pinker argues, stem from the genetic
heritage of a small group of humans that left Africa about 100,000 years ago and
slowly populated all regions of the world.

Developmental linguistics furnishes him a perspective from which to extend his
vision of human nature. Of signal importance is Noam Chomsky's theory of
universal grammar, of which the grammars of empirical languages are instances.
The theory suggests that this deep grammar lies embedded in genetically
determined brain structures, which form our syntactical abilities. The language of
young children, for example, reveals grammatical regularities that could not be
derived from the speech of parents, but must, it would seem, have been genetically
preprogrammed. Pinker proposes that mental categories of this kind shape all of
our experience. From birth, the brain begins to organize experience into
meaningful patterns whose structures are most easily explained as the results of
natural selection having operated on the brains of our Pleistocene ancestors.
Experiments, for instance, show that infants as young as 9 months begin reliably to
interpret certain behaviors as intentional (e.g., pointing). Of course, those
protohumans who failed to become adept at reading the intentions of others were
quickly shoved into oblivion.

Pinker is mindful that environmental infusion is necessary to activate or realize
every biological trait. Evolution produces dispositions that expect, as it were, a
certain range of experience. From the point of view of modern biology, this
principle of gene-environment codependence has a perfectly pedestrian ring. What
keeps the sides at war remains: With a given trait, how much can be attributed to
genes and how much to environment? And is it even meaningful to attempt to answer this question? Pinker concedes that many experimental studies suggest a surprisingly plastic cerebral cortex, but he short-circuits the implications of this admission by relocating most hard wiring to the midbrain, from which basic emotional patterns stem. Yet one would have thought that the evolutionary acquisitions making us specifically human have a primary locus in the cortex -- high intelligence and language, for instance.

Many battles of the science wars that Pinker re-enacts were fought over the degree of genetic determination of intelligence. He contends that individual differences in intelligence have a strong genetic component, though he is vague about how strong, citing a wide range of values. He does allow that most intellectual differences among races are probably due to unequal experience, but maintains that cognitive traits distinguishing the sexes well up from the genes. In his discussions of intelligence, two salient questions remain unexplored: Is intelligence a single trait that can be simply measured? And, if we could gauge it reliably, can we sensibly parcel out its genetic and experiential components? Any test calibrated on Newton's genius would surely consign Darwin to the country parsonage he once contemplated. While techniques exist for estimating the heritable component of differences in intelligence, geneticists like Lewontin conclude that only the befuddled would attempt this. Gene-environment interaction is dynamic, and the components only artificially separable. The experience that evoked Darwin's genius would merely have made Newton seasick. Genes count, but differently in different environments. Moreover, the brain's neural construction is far too complex to be genetically preplanned in any detail; so early experience and chance must sculpture the synaptic connections in the developing infant. Recent studies indicate that young children whose mothers constantly talk to them show marked improvements in grammar and vocabulary later on, while children deprived of the experience of language in early years never learn to use it adequately despite any program sealed in their genes.

Pinker sometimes mentions objections like these, but flicks them away or drowns out their significance in the monotone mantra of the genes. He focuses on "dirty tricks" and political biases of leftish scientists who reject his genetic version of human nature. He charges Lewontin with using a "doctored" quotation from an opponent (careless, inconsequential misquotation, it seems to me) and derides Gould's Marxism -- which most biologists take to be faux Marxism that merely adds rhetorical flourish to serious ideas. He is somewhat less irritated by neoconservatives like Irving Kristol, Leon Kass and Tom Wolfe, since their metaphysics has no sting.

Pinker's fundamental argument depends on theoretical suppositions that require closer inspection, but he confidently rests on this unstable platform what he considers the prescient conceptions of the likes of Thomas Hobbes, Milton Friedman and Richard Posner. Thus Hobbes believed that cooperative impulses of individuals would succumb to innate aggressiveness and selfishness were not those
softer inclinations steeled by the deterrent force of the state. And today free markets have turned private vices into public virtues. Pinker urges that an appreciation of a genetically fixed human nature will serve even in the arts, exposing there the bareness of both the modernist and the postmodern aesthetic. (Yeats, Eliot and Borges, it seems, are missing from reading lists at M.I.T.) With the triumph of evolutionary theory, Pinker sees a new scientific, cultural and political alignment near, one that accepts a more constrained conception of human nature and adopts corresponding social and economic policies, but does not neglect the genetically less endowed -- in short, a compassionate conservatism.

*Robert J. Richards teaches history and philosophy of science at the University of Chicago.*

Published: 10 - 13 - 2002 , Late Edition - Final , Section