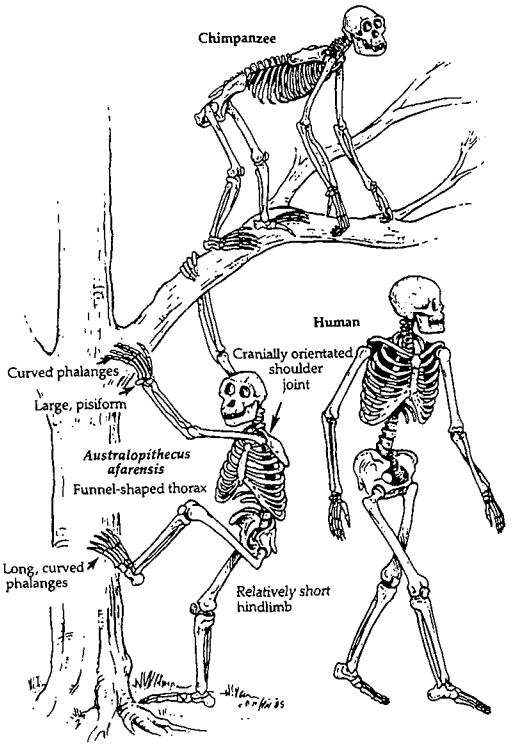

with a dispirited blandness and no desire to write, paint, or compose. Many artists have responded as did the painter Edvard Munch, who resisted medical treatment when he was hospitalized for psychiatric illness: "It would destroy my art," he insisted. "I want to keep those sufferings."

Along with the promise of newer medicines that may eliminate the worst side effects is the prospect that, by the year 2000, there may be prenatal testing for the manic-depressive gene—and the possibility of aborting a fetus at high risk for the disease. Twenty years ago, in his psychiatric study of Edgar Allan Poe, John Robertson asked, "Who could, or would, breed for . . . a club-footed Byron, a scrofulous Keats, or a soul-obsessed Poe?" Such idle speculations, Jamison writes, may demand real decisions tomorrow.

ORIGINS RECONSIDERED: In Search of What Makes Us Human. *By Richard Leakey and Roger Lewin. Doubleday. 375 pp. $25*

How far back can you trace your family tree? A million years? Three million years? The answer you give will embroil you in the fiercest controversy in paleoanthropology today.

In *Origins Reconsidered*, Leakey, director of the Kenya Wildlife Service and a leading paleoanthropologist, has written (with science writer Lewin) an entertaining introduction to a discipline that studies early primates and, by extension, what makes us human. To explain human origins, Leakey draws on disciplines as diverse as geology, archaeology, primatology, comparative anatomy, molecular biology, and psychology. But it is clear that in his heart Leakey is a *bone man*—most at home hunkered down over a table of fossils at Kenya's Lake Turkana. There, he says, "in the arid sediments around that magnificent lake, answers were to be pieced together that went beyond the questions normally asked in science."

No point in paleoanthropology is more in contention than when to date the origins of the human race. Leakey's long-time antagonist (and one-time friend) Donald Johanson, discovered in Ethiopia a small, three-million-year-old fossil skeleton that Johanson believes is the earliest-known representative of our species. The implications Johanson drew from this skeleton (dubbed "Lucy") are, first, that all humans are descended from a single branch, and, second, that what distinguishes human beings is bipedality. Leakey, however, finds "Lucy" still too apelike, and asserts that a human Rubicon was crossed only with "Turkana boy," a 1.6-million-year-old skeleton he himself discovered in 1984. Had Turkana boy survived into adulthood, he would have stood over six feet tall, his physique molded by a life of hunting and tool use. By dating humankind's emergence from this much later specimen, Leakey can describe a human species that at its origins was less violent and characterized by cooperation and a more complex social life. "At the real beginning," he says, "was the burgeoning of compassion, morality, and conscious awareness that today we cherish as marks of humanity."

If cooperation marks the human species, one would be hard-pressed to find it among paleoanthropologists today. Recalling his entry into the field years ago, Leakey writes: "If I'd known then what bitter academic and personal

battles lay ahead, maybe I would have dropped the whole enterprise and gone off to do something more peaceful—like being an army general."

HEISENBERG'S WAR: The Secret History of the German Bomb. *By Thomas Powers. Knopf. 610 pp. $27.50*

The great riddle of World War II is why Germany never developed an atomic bomb. The physicists who fled from Nazi Europe—Niels Bohr, Hans Bethe, Leo Szilard, Robert Oppenheimer—warned American authorities that Germany lacked nothing necessary for developing nuclear power. Besides being the birthplace of modern physics, Germany had ample stores of uranium seized from Czechoslovakia. It also had a Führer who would find such a destructive bomb appealing. Most important, it had Werner Heisenberg—winner of the Nobel Prize, discoverer of the uncertainty principle in physics, and the scientist most capable of single-handedly engineering such a bomb. Fear of Heisenberg fueled the U.S. Manhattan Project in its furious race to beat Germany to the bomb. Yet when Americans scoured German military installations after the war, they discovered to their astonishment only a small research reactor, hardly even the first step toward an atom bomb.

We are now in a better position to understand this puzzle. After the war, Heisenberg and other German scientists were interned in England near Cambridge, where hidden electronic devices recorded their conversations. From recently released transcripts, Powers, a Pulitzer Prize–winning authority on American intelligence agencies, has pieced together a version of the story. The principle reason Germany did not develop the bomb—and the hero of Powers's story—is Heisenberg himself. Simply stated, he was afraid to give Hitler such a potentially decisive weapon. Heisenberg said he "falsified the mathematics in order to avoid development of the atom bomb." "Heisenberg had the luxury and the burden of choice," Powers writes, "since no one could challenge him with anything weightier than a contrary opinion." Heisenberg's scrupulous conscience, in Power's narrative, almost puts to shame the physicists of the Manhattan Project, who were largely untroubled by the terrible bomb they were building.

But a closer reading of Powers's materials reveals a more ambiguous story. After the war it was clearly in Heisenberg's interest to exaggerate his opposition, yet during the war he at times expressed his hope for a German victory. Fritz Houtermans, a Heisenberg confidant, in 1941 leaked a message to American scientists, warning that "Heisenberg will not be able to withstand longer the pressure from the government . . . [for] making of the bomb." But the German government oddly never applied that pressure—in part because Hitler expected too swift a victory to justify the long-term research and expense. Heisenberg's luxury was, in fact, that of a Hamlet, indecisive, wavering, his conscience never put to the test. Fortunately for the Allies, Heisenberg's uncertainty principle extended beyond matters of physics.