Joynson may believe that he has exonerated his client; Burt, however, hardly leaves this courtroom with his reputation intact. Ironically, Joynson's "innocent" Burt emerges as an even less likable character than Hearnshaw's "guilty" Burt. Such a verdict, however, is acceptable to Joynson; Burt's methods may have been less than admirable, he argues, but they were short of criminal.

Joynson's arguments are sure to invoke detailed rejoinders from those now called "anti-Burters." Of more concern than Burt's posthumous reputation, however, is the broader question of standards of evidence, both scientific and historical, raised here. Joynson's research contains nothing to challenge the current consensus that, as scientific evidence, Burt's data are unacceptable. Moreover, even if one believed Burt innocent of conscious wrongdoing, the fact that such data were used in debates over educational policies and went unchallenged until the 1970s would still be scandalous.

Historians, however, can rarely invoke such strict standards in admitting evidence. Unfortunately, like Hearnshaw, they must often draw their conclusions from incomplete records, ambiguous writings, and the memories of contemporaries—the same materials Joynson uses to construct his alternative explanations. Burt may never have received his day in court; his place in history, however, must now be judged by the work he left behind.

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The Discourse of Primatology

Primate Visions. Gender, Race, and Nature in the World of Modern Science. DONNA HARAWAY. Routledge (Routledge, Chapman and Hall) New York, 1989. x, 486 pp., illus. $35.

This is a work of historical scholarship, assimilated to a visionary imagination. The author wants it "to be responsible to primatologists, to historians of science, to cultural theorists, to the broad left, anti-racist, anticolonial, and women's movements, to animals, and to lovers of serious stories" (p. 3). With so many diverse commitments and intended readerships, this is no ordinary scholarly study in form or content. Indeed, it should be seen as an ambitious response to the call within the well-established arena of the social study of science for new kinds of works that do full justice to the complexity of the construction of scientific knowledge and give a responsible critique of its authority. Works of such intent are more concerned with the mapping of the heterogeneous territory in which scientific knowledge is created than with its transformations through time. That is, connecting the work of scientists to its broadest resonances in culture and society might be emphasized at the expense of an orderly chronology of cause and effect.

There is at the same time a provocative questioning about the rendering of such a new kind of account: what are the limitations of external and of internal critiques of scientific authority? What kind of critique of a science might be powerful enough to alter the practices of the relevant scientists or to suggest viable new forms of inquiry? At what price in terms of cognitive shift and commitment to a Western scientific worldview? These are the sorts of questions that Haraway means to pose in her account of the science of primatology, poised between biology and anthropology and relevant to psychology and medicine as well.

Haraway's account can be read chronologically, but not without considerable breaks and distractions. The first three case studies, which can stand as independent essays, concern scientific treatment of primates before World War II: the career of the taxidermist Carl Akeley (periodized as 1908–1936), the creator of the American Museum of Natural History's African Hall; the career of Robert Yerkes (periodized as 1924–1942) and his laboratories for the study of primate biology and behavior; and the careers of C. R. Carpenter and S. A. Altmann (periodized as 1930–1955) and the emergence of field primatology.

However, Haraway's main interest in the book seems to be the development of post–World War II primatology in parallel with complex theoretical developments in physical anthropology, biology, and psychology. After a brief discussion of how primatology in part developed as *National Geographic* popular science, in which there is a vivid account of Jane Goodall's career, Haraway gives a detailed account of how a particular kind of physical anthropology was instituted through the success of Sherwood Washburn and his students. Since the process of institutionalization through networks she depicts underlies the present primatology research establishment in anthropology, this account is bound to be controversial.

Though there are two other interesting chapters in this section, on Harry Harlow and on the practice of primatology in Japan, India, and Africa, the chapter on Washburn and the "new physical anthropology" is key to the climax of the book, which consists of considerations of the work of four contemporary field primatologists: Jeanne Altmann, whose work is represented as centered on the "fundamental metaphor" of "dual career mothering"; Linda Marie Fedigan, from whose work "females previously consigned to a category of resource or matrix emerged . . . as active generators of lives and meanings"; Adrienne Zihlman, noted to be "a principal generator of a being called 'woman the gatherer' "; and Sarah Blaffer Hrdy, whose work is predicated on "the bedrock importance of competition, especially among females." It is with the project of feminist primatology, represented by the careers and writing of these figures, that Haraway herself is most sympathetic, and it is in this section of the book that her own commitments are most clearly expressed.

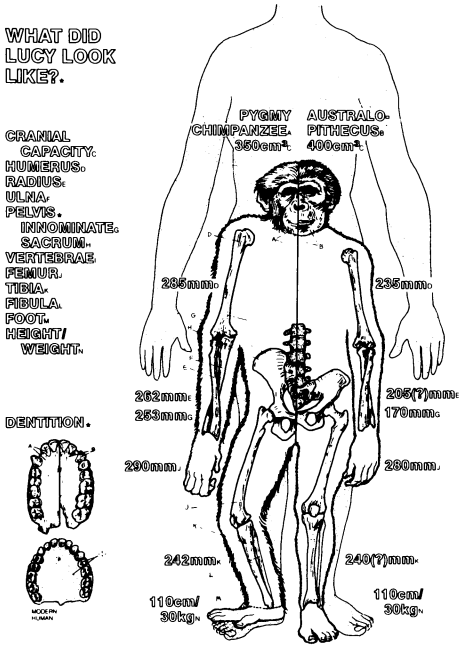
Indeed, the most striking feature of her text is Haraway's passionate statement and restatement of these claims. It is almost as if the episodes and bits of conventional history are platforms for the presentation of punchlines—stunning formulations progressively developed throughout the book. To me, these claims and the work itself rest on four foundations.

First, Haraway conceives scientific explanation and the production of knowledge as collective story-telling, the creation of narratives that are integrally related to other kinds of cultural narratives. Furthermore, she relies on the literary technique of allegory, whereby any story evokes other stories in the mind of its reader, to make the broad, sometimes startling range of associations between scientific discourses on primates and other kinds of cultural discourses. The intent here is to relativize scientific discourse and its authority so as to make it commensurate with other kinds of cultural phenomena. For example, as Haraway states (p. 377),

> *Primate Visions* is replete with representations of representations, deliberately mixing genres and contexts to play with scientific and popular accounts in ways that their "original" authors would rarely authorize. [It] is not innocent of the intent to have effects on the authorized primate texts in both mass cultural and scientific productions, in order to shift reading and writing practices in this fascinating and important cultural field of meanings for industrial and post-industrial people.

Second, the particular scientific narrative of primatology is constructed around a dualism between nature and culture. To ask how human are primates and how primate are humans has been a central dynamic of this science. Haraway's goal is to question the dualistic frames of thought, not only in primatology but more generally in the life, human, and cognitive sciences. As she puts it (p. 377),

> I am not interested in policing the boundaries between nature and culture—quite the opposite, I am edified by the traffic. Indeed, I have always



"Adrienne Zihlman's . . . conception of the relations among a pygmy chimpanzee, the australopithecine fossil named 'Lucy,' and a modern human. This coloring exercise in an educational publication teaches that the living species most like the human hypothetical ancestor is the pygmy chimpanzee . . . . In a very different construction of origins, the 'discoverer' of the fossil Lucy, Donald Johanson. . ., has joined with the designer of E.T., Jonathon Horton, and museum exhibit designer, Kevin O'Farrell, to create the prototypes for a line of rubber dolls—Lucy, her 'husband' Lorcan, and their children Lonnog, Lifi, and Liban." [From A. Zihlman, *The Human Evolution Coloring Book* (Barnes and Noble, 1982); reproduced in *Primate Visions*]

preferred the prospect of pregnancy with the embryo of another species.

This last reference is to a theme of Octavia Butler's science fiction novel, *Dawn*, to which Haraway turns in her concluding chapter. This final move is in line with the radical genre-blurring spirit that pervades the book.

Third, Haraway is committed to a mode of deconstructive criticism, forged in the interaction between feminist and poststructuralist theories of language, that aspires to remake the objects of study and methods of inquiry in Western sciences. In her words (p. 324),

> It is specifically the permanent tension between construction and deconstruction, identification moves and destabilization moves, that I see, not as uniquely feminist, but as inherent to feminism—and to science. Both feminist and scientific discourses are critical projects built in order to destabilize and reimagine their methods and objects of knowledge, in complex power fields.

And earlier (p. 309), she poses most starkly the challenge to this critical project:

> The Romantic and modernist natural-technical objects of knowledge in science and in other cultural practice, stand on one side of [a] divide. The postmodernist formation stands on the other side, with its "anti-aesthetic" of permanently split, problematized, always receding and deferred "objects" of knowledge and practice, including signs, organisms, selves, and cultures. Whether scientific analysis could ever be postmodernist becomes a compelling question within this frame. What would stable, replicable, cumulative knowledge about non-units look like? . . . The issue is not method—technical versus interpretive, quantitative versus qualitative, reductive versus holist, etc.—but the structure (or anti-structure) of the object allowed to materialize in discourse.

Fourth, Haraway clearly defines her project as political and allied with the concerns of prominent contemporary feminist primatologists. In the context of her discussion of the career of Adrienne Zihlman she notes (p. 346) a predicament she shares with her subject:

> the existence of a division within academic discourse broadly . . . in the United States, where feminist critical studies have flourished institutionally and theoretically in the academy. In numbers, sophistication, and even material resources, U.S. feminist scholars in most disciplines can and do lead odd double professional lives, partly enmeshed in the "general" (i.e., still male-dominated and male-defined discourse) and partly enmeshed in a very heterogeneous and self-reproducing academic discourse.

The kinship between her own project of criticism and the critique emergent in the work of her subjects lends Haraway's claims a special authority and communicates a sense of joint participation in momentous intellectual change.

In the spirit of Haraway's own desire to envision a science such as primatology as "a heterogeneous space of contestable narratives," it must be said that each of these foundations of her own work is also highly contestable, and thus successfully provocative.

Primate Visions has in common with the most interesting and stimulating works now appearing in history, feminism, and cultural anthropology, among other human sciences, the qualities of being structurally unorthodox, highly personal, hyperbolic, if not visionary, in their claims, based on voracious scholarship—in short, experimental. Such works are landmarks by virtue of their effort to reshape not only the practices and purposes of their own disciplines, but also those of the communities, groups, and cultures on which they focus. For this, Haraway's book especially commands the attention of workers in the biological and medical sciences, who will find it a document at once most strange and most familiar.

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The Productivity Question

Productivity and American Leadership. The Long View. WILLIAM J. BAUMOL, SUE ANNE BATEY BLACKMAN, and EDWARD N. WOLFF. MIT Press, Cambridge, MA, 1989. xii, 395 pp., illus. $29.95.

For more than two decades business leaders and politicians have wept, wailed, and wrung their hands over the erosion of America's position in the world economic race. The deficit, the Japanese, Star Wars, and the break-up of the family have all been blamed for the alleged loss of competitive leadership. In spite of the heat and the intensity of the debate, light has been difficult to come by. The entire discussion has been conducted in an almost surrealistic atmosphere, with few attempts to define "competitive leadership" or to understand what the loss of such leadership might imply.

Baumol, Blackman, and Wolff have written a very important book. The debate had been cast in terms of a short-term "crisis," and the myriad of proposed solutions share little beyond oversimplicity—prohibit Japanese imports, make Americans work harder, tax more, tax less, spend less on defense. Baumol and his coauthors have refocused both the rhetoric and the substance of the argument in a way that makes the issues intelligible and may possibly lead to more effective policies. They have set the problem of "loss of leadership" in the framework of long-term economic growth, and they explore its causes and implications within the context of American and world development. Since the death of Simon Kuznets, economists have all but abandoned the study of economic growth. If *Productivity and American Leadership* does no more than force them to return to the study of this fundamental issue, it has more than justified the labor expended by its authors.

Eschewing inflammatory rhetoric—the authors are, in fact, quite optimistic about American prospects—the book reads like a well-structured series of lectures from an adult education course. First, the question of the importance of a rising level of national