

# Primatology Is Politics by Other Means<sup>1</sup>

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## 1. The Field: Origins

Adam and Eve, Robinson Crusoe and Man Friday, Tarzan and Jane: these are the figures who tell white western people about the origins and foundations of sociality. The stories make claims about "human" nature, "human" society. Western stories take the high ground from which man -- impregnable, potent, and endowed with a keen vision of the whole -- can survey the field. The sightings generate the aesthetic-political dialectic of contemplation/exploitation, the distorting mirror twins so deeply embedded in the history of science. But the moment of origins in these western stories is solitary. Adam was alone, Robinson was alone, Tarzan was alone; they lacked human company. But each couple, each solution to the illogical insufficiency of a rational autonomous self, was fraught with the contradictions of domination that have provided the narrative materials of "the West's" accounts of its devastating collective history. The tragedy of the "West" is rooted in number: One is too few and two are too many. Memory, the origin, is about a lost oneness, sameness. The telos is about perfect union. The process of mediating the beginning and the end, called history, is a tale of escalating domination toward the apocalypse of the final transcendence of difference. Until the end, difference is dialectical, dynamic antagonism; at the end, difference is transubstantiation and communion.

This essay in the history of zoology and bio-anthropology is part of a world-wide oppositional effort, rooted in social movements like feminism and anti-racism, to retell these stories as a strategy to break their power. My narrative materials will be recent social constructions of the Primate order, a zoological classification powerfully implicated in the genesis of self and other, culture and nature, gender and sex, same and different. My thesis is that the scientific practices and discourses of modern primatology participate in the preeminent political act in western history: the construction of Man. What it means to be human cannot escape the logic of the story of man. Self-construction evokes collective deconstruction.

Primatology is politics by other means, and women's place is in the jungle, arguing the nature of beginnings and ends. The life stories of monkeys and apes are industrial and post-industrial versions of the past and the future of them and us. Primatology is a complex scientific construction of self and other, culture and nature, gender and sex, human and animal, purpose and resource, actor and acted upon. This scientific field constrains who can count as "we". Mind and sex provide most of the drama. Primatology is also compelling soap opera.

Adam ruled Eve in the foundation of compulsory heterosexual reproductive politics. He ruled her in retribution for her disruption of the boundaries that made the Garden possible. Just as Milton's *Paradise Lost* marked the retelling of Adam and Eve's story at the "moment of origin" of the scientific revolution, Protestant Christianity, capitalism, and western expansion, it is possible to see current evolutionary scenarios as retellings of the first family, the first "we", at the "moment of origin" of multinational capitalism, secular humanism, the information sciences revolution, and the emergence of the "Third World". One way of looking at story telling by women primatologists is to see them as "Milton's daughters", whose materials are necessarily the inherited stories that mark the biological category "female", as well as actual women, as other (Gubar and Gilbert 1979; Haraway 1981 and 1983b). Female and women, the marked categories, are inflected, linguistically and socially. This essay explores what is at stake when "female" is both the object of study and the condition of observers in contemporary contests for authoritative origin stories. Clearly, origins here are not about specific historical, or even prehistorical, events and durations. The time of origins is mythical, and the tension between mythical and other kinds of time is part of the structure of western scientific discourse (Fabian 1983).

Robinson Crusoe subordinated his companion in the drive to rationalize time and space on the island; male union in love and equality was a tantalizing dream, but only if the boundaries of mind and body essential to order could be sustained. Nancy Hartsock (1983a and b) has called this order "abstract masculinity". Michel Tournier (1972) redid Defoe to erase the crushing rationality of Robinson's boundaries, providing a resource for the sociologist and philosopher of science, Bruno Latour (1984), to contest the boundaries separating "science" off as a sacred center protected at heart from the polluting arenas of politics. Latour, meditating on versions of Robinson Crusoe, gave me the title for this paper, as he appropriated von Clauswitz's "war is politics by other means" to craft a slogan for the social studies of science: "La science, c'est la politique continuee par d'autres moyens." (Latour 1984, p. 257). And it is Latour who stresses that this view does not "reduce" science to politics, to arbitrary power rather than rational knowledge. Those are not the stakes, but mystifying dichotomy. Precisely, his is an argument against reduction of any kind and for attention to just what the "other means" are. In primatology the means centrally include narrative strategies and the social power to deploy them for particular audiences. "Tout se negocie." (Latour 1984, p. 183). It should not be surprising that one of the women primatologists intent on destabilizing meanings of social dominance and reproductive politics in baboon society has collaborated with Latour in analyzing

the structure of origin stories. (Latour and Strum 1983).

As for Tarzan, his humanity seemed to hinge on his renunciation of the Garden; his final lordship had to be over self, a regime mediated by the civilized Jane. But Tarzan and Jane happily failed, where Adam and Eve succeeded in making history and generating the peoples of the Book, the tragic subjects of salvation history and monotheisms. At least on TV in the 1950s, the former pair returned to the jungle, never properly married and with children of dubious provenance, one of whom was a chimpanzee. There is a hint of possibility of sociality without domination in this intriguing tale. It hinges on how you think about parenting an ape. In the 1950s on American television, it was radical fare.

But there are many versions of Tarzan; and in the latest, the popular movie Greystoke, Tarzan and Jane were separated again, suspending their possibility of progeny who could break the distinction between human and animal. Witness to the threatened dissection and subsequent murder of the old male ape who protected him in Africa, the legitimate Lord Greystoke cried out in front of the British Museum, "He was my father." claiming the ape as his patrimony and suspending his promising betrothal to Jane. A curious touch here is that the natural-seeming simian father is a simulated ape, one who was born in film techniques, make-up artistry, the pedagogy of teaching human sign language to apes, and scientific field studies of gorillas and chimpanzees which (who) teach ape vocal and gestural communication to humans. Jane too is of dubious parentage, the American ward of the senior Lord Greystoke. Late 20th century versions of nature are more about simulacra than about originals (Baudrillard 1983). These are stories about copies superior to originals that never existed; Plato's forms have given way to cyborg information. All the versions are about the problem of connection of hostile but perversely echoing/reflecting/twinned poles within social relations and culture myths based on dualisms.

It is not unimportant to this essay that Jane is always the civilized pole in the Tarzan stories; the gender "woman" easily carries the meaning of culture to the primitive pole, gender "man". Nature/culture and feminine/masculine lace into networks with each other, not isomorphisms or unidirectional parallels. These dualist axes are story operators, ways of structuring relationships. They are not static ascriptions. Geometries organized around the dualisms of nature/culture and sex/gender structure the narrative of human relation to the animals and much else in primatology. Redistributing the narrative field by telling another version of a crucial myth is a major process in crafting new meanings. One version never replaces another, but the whole field is rearranged in inter-relation among all the versions in tension with each other. Destabilizing an origin story is perhaps more powerful in the deconstruction of the history of man than replacing it with a more progressive successor.

Restructuring a field held together by its tensions is how primatology works to produce meanings around sex and gender. My explanatory model for feminist struggle in life and human sciences is not paradigm shift or replacement, but restructured and destabilized narrative fields. My story does not rest on substitutions of true

versions for false, feminist for masculinist, scientific for ideological accounts. Primatology as a story-telling practice works by another process, another mechanism in the political contest for meanings. Many kinds of activities can restructure a narrative field, including practices for recording data, publishing patterns, favored animal models, a women's movement, developments in adjoining sciences, complexities in conservation politics, and new nationalist governments in east Africa (Strathern 1980 and 1984; Landau 1984; Beer 1983; Nash 1982, pp. 342-78).

In the founding western stories, each autonomous self was a man; indeed, each autonomous self was Man. But politics is about a "we". Politics only exists where there is more than one voice, more than one reality. Politics is about difference -- its recognition, negotiation, suppression, constitution, exaltation, impossibility, necessity, scandal, and legitimacy. Gender is also about difference; it is the politics of the socialization of sex. Gender is the politics of an ordered, collective (but hardly shared and not exclusively public) world built from the profusion of differences originally constructed as sex. And finally, the "West" is about difference; it is the politics of the civilization of the "primitive", the domination of nature by culture. Culture appropriates nature in western founding stories, just as gender is the social appropriation of sex as resource for social action. This fundamental relationship is built into our notions of causality, human nature, history, economics, etc. The one appropriates the other; from Aristotle to Hegel to Sartre, there has been no disagreement about basics. Gender and the West are eminently political constitutions because they order the differences central to the possibility of a collectively recognized and enforced reality. The rule of order in these hard myths is the dialectical rule of act and potency, mind and body. Primatology is a complex scientific practice for discovering/constructing natural-technical objects of knowledge within an epistemic field structured by sex/gender and by the "West" and its others. The unanswered question in these politics is whether difference can be ordered by something other than deadly opposition, without falling into the covert dominations of functionalism and sweet balance. Functionalism and organicism do not remove the principle of domination; they only remove the drama of dialectical and apocalyptic opposition. That merely makes domination mundane and boring.

I am unwilling to accept organicism and holism in my philosophy and politics, feminist or otherwise. Or better, organicism must be positioned as a contradictory formation in a field of simultaneously serious and ironic possibilities. I believe this is true of both social life and scientific or political theory. Many strands within feminist theory are attempts to articulate a politics of shared and partial realities that value serious difference. Feminism must be opposed to holist organicisms if it is to avoid logics and practices of organic domination. Organicism, in science or politics, will not destabilize the story of man. Simultaneously, feminism must affirm the hope and partial reality of community.

But there are at least as many identifications and unities to break down as to rebuild, and any new construction requires both belief and disruption. Curiously, the set of social practices and discourses in

western culture which seem most readily to require these dual relationships to action and knowledge are the natural sciences. Cynicism is fruitless, worse than the wrong pH or cruel cage design for producing conditions yielding understanding of animals. Cynicism is another name for ideologically rigid objectivity. Faith seems more promising, full of possible connections to a "real" world. But "connections" breed identifications, appropriations, and illusions of wholeness. These matters are played out in detail in the field studies of monkeys and apes. Primatology as a field of contest provides some intriguing patterns of political thinking about identity, association, and change. Most positions within the U.S. white women's movement are replicated -- or better negotiated -- within primatological discourse. Primatology is a genre of political discourse about the question of community.

Primatology is a structured, contested field of scientific discourses about the foundations and origins of sociality. Like other major systems of myth and political theory in western story-telling traditions, primatology starts from a unit, a one, and tries to generate a whole, a we. And as in these other stories, the narrative tension in primatology comes from the drama of the dialectics of domination, the scandal of difference. Primatology is a utopian project, close to the heart of western political theory. The sciences of monkeys and apes are inherently about origins, about the nature of things. Even the name of the order, given by Linnaeus in 1758 in the 8th edition of the Systema naturae, means "first". The Primate order has never been stable, whether the debates were between Huxley and Owen on evolution in the 19th century or Adrienne Zihlman and Owen Lovejoy on bipedalism and reproduction in the 20th. (Zacharias 1984; Zihlman and Lowenstein 1983; Lovejoy 1981 and 1984).

Primatology is also a period in salvation history, deeply immersed in not-so-secular versions of the Garden and the Fall. It is a discourse on first principles; and it is a major social practice for western 20th century people to construct and negotiate the boundaries of human and animal, gender and sex, west and other, culture and nature, whole and part.<sup>2</sup>

These boundaries are not in phase with each other on the map of the primate body, but they interact in every imaginable way, perhaps most often synergistically. The boundaries are somewhat analogous to the chakras of other bodily maps; they sustain localized bodily interventions but do not reveal the secret of any "real" physical presence. The field of negotiation of these boundaries -- sustained by, but not reducible to (even "in the last instance"), material social relations of late 20th century systems of race, class, and sex -- cannot help but command the passions of those of us with stakes in the proper (i.e., specific historical) constitution of human nature. I do not know anyone who does not have some stake in this territory. To the dismay of professional primatologists, constantly trying to license the practice of discourse on monkeys and apes, the affairs of the anthropoidea are a popular matter. I cannot help but consider the dismay feigned when the professionals write -- and cite in technical journals for key points of their arguments -- tracts like Chimpanzee Politics and The Woman That Never Evolved. (de Waal 1982, Hrdy 1981).<sup>3</sup> They love the fray; primatology is full of exuberant

action and the desire to narrate. And the "actors" include animals and people, laboratories and books, and a great many other categories of resources for crafting political orders. (Callon and Latour 1981, Latour 1978). If there is a political unconscious, there is surely one horizon of it generating<sup>4</sup> primatology as a socially symbolic act. (Jameson 1981, pp. 77-89).

Primatology is also a branch of modern biology and anthropology, and as such is subject to the epistemic structuring of the life and human sciences. Although there is no contradiction between this characterization and those asserting the mythic and political nature of the sciences of monkeys and apes, there is a tension. Like the boundaries between nature and culture, sex and gender, animal and human, the scientific and mythic characters of primate discourses are not quite in phase; they evoke each other, echo each other, annoy each other, but are not identical to each other. Science and myth do not exclude or replace each other; they are versions of each other. In the 20th century in the United States, they structure each other. Reducing science to myth or vice versa would obscure precisely the field of gender politics -- and much else -- which I regard as real and interesting. Reduction is rarely a very rich explanatory strategy, least of all when the goal is to evoke mediating strands and complexities tying together social-technical-symbolic life across sacred boundaries. Reading primatology is itself an exercise in boundary transgression.

And to make matters even more tense, the life and human sciences are in a state of war, as fits any set of mythic twins, virtual images of each other. Biology, a natural science whose practitioners tend not to see themselves as interpreters but as discoverers moving from description to causal explanation, and anthropology, whose practitioners tend to argue their authority is the fruit of interpretation, set up a difference that structures primate science. In primatology, the stakes of the conflict are mundane -- publications, jobs, status hierarchies among monkey watchers, preferred metaphors, explanatory strategies, favorite graduate schools, versions of histories of the discipline, etc. Until recently, the stakes have also been gender of monkey watcher: many more women primatologists originally came from anthropology than from the biological disciplines, a matter of no little consequence in the sociobiology and behavioral ecology debates. The contest is for the allowable meanings of "adaptation". The anthropologists have inherited the story-telling strategy rooted in structural functionalism deeply tied to social and cultural anthropology, while the biologists have inherited the story-telling strategy of positivism and empiricism deeply tied to the hegemonic authority of physical sciences. Both inherit versions of political economy, anthropology more focused on the division of labor, role theory, and notions of social efficiency, and biology on market analysis, econometrics, investment strategies, and life insurance demographic techniques. One looks more for social role and functional integration, the other for game theory calculations and cost/benefit analysis simulations (e.g., Fedigan 1982 and Hrdy 1981).

First let us take an unconscionably brief look at epistemic structuring in the life sciences. Since the late 18th and early 19th

centuries, nature has been constituted as a system of production/reproduction and communication. The life sciences have been crucial to this very material transformation of objects of knowledge and practice. Nature becomes an expanding system in which the rational control of the product of expansion operates as mind to body. Malthus was no fool; neither was Adam Smith or Charles Babbage or Henri Milne-Edwards or Charles Darwin. They all understood what the division of labor did to nature, and used this not-so-covertly hierarchical principle for all it was worth. It turned out to underlie exchange value, to ground the common coin or currency of life, the natural economy. Functional explanation in biology of the body's differentiation into specialized sub-systems is subordinated to explanatory strategies drawn from the market, to investment and cost-benefit explanations built deeply into the theory of natural selection. How far away scarcity assumptions and market constraints lie sets the boundaries for debate about levels of explanation in biology, including primatology. Fewer or more "degrees of freedom" are at stake. But in biology, ultimate stakes are staying in the game, replication, differential reproduction.

From the point of view of life as an expanding system, two "sub-systems" or functional specializations structure biology in a special way. Since the constitution of life as a "natural-technical object of knowledge", without caricaturing too much, it is possible to tell the history of biology in terms of a dialectic between nervous and reproductive systems. The stage of possibility is set by a prior strategic realm dealing with resource intake and outflow. For example, in recent accounts food getting strategies logically have to function as the foundational, generative variables; the progeny are sex and mind. (Wrangham 1979). Sex is one of two preeminent biological issues -- or really not sex but reproduction, since sex is something of a scandal from the point of view of rational processes of copy fidelity. Sex introduces too much difference, and so costly conflict, without making the benefits completely clear. But primates are stuck with it, the sad burden of evolutionary inertia.<sup>5</sup> We are told sexual politics would not exist had the early cells not fooled around and ended up in escalating asymmetry. Sexual politics is theorized fundamentally as the result of original difference. Big egg, little sperm, presto the dialectics of history and the sad facts of the dismal science of economics. "The investing sex becomes the limiting resource." (Hrdy 1981, p. 22; Trivers 1972; Williams 1966).

The second pre-eminent issue is -- but what do you call it? Brain, consciousness, strategy, mind? By the late 20th century both sex and mind have been recast from organismic molds into technological-cybernetic ones: they have become coding/control problems for systems that are still nostalgically called organisms. But simulations really have more status than organisms for a thoroughly high status biological theorist. Ask any serious sociobiologist. Another way to put it is that the referent is less sexy than the sign. Realism gives way to post-modernism in biology as well as literature and film. (Jameson 1984, Haraway 1985). Guess which human gender does more high status simulating of both sex and mind. (Are you sure?) "Strategic reasoning" in several authors in primatology comes to be equated with rationality pure and simple. This is a wonderful origin story for the kind of reason that made

writers in the Frankfurt school so nervous.<sup>6</sup> But whether monkeys and apes are imagined as old-fashioned organisms or new-fangled coding systems, for primatology sex and its control are inescapably what need to be known and explained.

Having rigorously demonstrated the importance of sex for biology, let me equally compellingly elucidate the epistemic structuring of anthropology. Two things are crucial. First is anthropology's birth from the distinction between primitive and civilized, between nature and culture, between those who travel and look and those who stay home and are looked at. There is no way around the charged historical constitution of the other as an object for appropriation, for observation, for visualization, for explanation. This structure has been generative of the sciences of man (sic). It works in art, politics, economics, science. Primatology's other is doubly primitive, doubly the matter to the form of anthropology, because the object is really an animal. Or is it? The puzzle of primatology is precisely here. Does one do cultural anthropology of monkeys? Sociobiologists accuse anthropological primatologists of doing little else. It is almost not a joke to imagine a truly dialogic relation with apes, in which experimental ethnography and co-authorship can be attempted. (Clifford 1983). Jokes are always about possible boundary incursions. Primatology is about the simultaneous and repetitive constitution and breakdown of the boundary between human and animal; i.e., this aspect of primatology is about the moment of origins again and again. Primatology is a time machine in which the other is placed at the time of origins, even if the empirical field is in modern Rwanda or Kenya. It is not an accident that the objects of primatology live in the Third World; they are the preeminent tropical other, happily literally living in a vanishing garden.

However, it is about as difficult by 1980 to find a truly natural primate as a truly natural savage; decolonization makes naturalization very hard and subverts whole fields of knowledge. How do you have a proper National Geographic style field experience alone with the apes amidst a crowd of camera-clicking tourists bringing in needed foreign exchange? (Jane Teas, personal communication). Poachers are even less funny. (Fossey 1983). Field primatologists go to great lengths to structure the natural status of their objects of knowledge. (Haraway 1983b). For human anthropologists the problem was the ethics of exchanging tobacco for the raw materials of textualization. (Shostack 1981). For primate anthropologists the problem is whether to touch, how close to come if the other is to be wild, still the mediator of the passage at the time of origins.

Both human and primate anthropologies necessarily obliterate the other, at least as a natural other, in the process of textualizing it. The race is to write just ahead of extinction. One result is the inescapable immersion of primatologists in the politics of international conservation, a matter that interacts with and greatly complicates the politics of gender. Though not an anthropologist, National Geographic's Jane Goodall (not the same as other Jane Goodalls) represents the perfect gendered condensation of these dilemmas -- the lone, white, woman scientist mothering her blond son in the image of Old Flo, the perfect chimp mother, while deep into the night the human types her field notes which make Flo and her kind safe



in books far from a Gombe penetrated by Zairoise guerillas. The question of touch, of closeness to the primate object of knowledge has been mediated specifically by women primatologists. One member of an ambiguous category can come closer to a member of another ambiguous category, and woman and animal are closer epistemically to each other within the tortuous logic of nature and culture than are man and animal. (Ortner 1972). Women primatologists have gone to great lengths to try to evade this polluting legacy. (Interviews with Adrienne Zihlman, Jeanne Altmann, Jane Teas, Shirley Strum, Naomi Bishop). They have also gone to some lengths to capitalize on it, dirt into gold, touch into science. Natural symbols. (Douglas 1970).

Obviously, sex and gender cannot be avoided in life and human sciences. Western man needs sex. Equality (not to mention domination) required the same of western woman. Sex and gender structure knowledge: they are the object of knowledge and they are the condition of knowing. This is my second crucial point about anthropology. Anthropologists have prided themselves for their early attention to sex and gender compared to other human or social sciences, but another face of this achievement is that this discipline, with psychology and biology, has been a leader in the constitution of sexualized discourses. (Foucault 1976). Is "the sex-gender system" a discovery of the first importance, or is it an over-determined position within the logic of nature-culture, full of the implicit problems of the latter pair? (Harding 1983). Both, obviously.

Many commentators have noticed the similarity of the categories:

woman/animal/primitive/other/body/resource/child/matter/potency.

They are all sinks for the injection of meaning. Is that what the privileged signifier is all about? Strathern (1980) argues that Western nature-culture polarities necessarily relate as resource to achieved production, matter to form, that which is appropriated to the active appropriator. She argues that because of this structure, the apparently innocent equation of nature-culture to Hagan (and implicitly other) distinctions like wild-domestic is actually a very serious, politically laden mistranslation. Bio-anthropology is even more deeply infused with this problematic relationship than human anthropology. But it is only animals....

Feminist epistemology, political theory, and scientific discourse inherit the problems of humanism. If humanism in many of its forms constructs man through the logic of appropriation of primitive-civilized, western feminism has constructed its object -- along with the claim of recognizing male supremacy cross-culturally -- through the logic of sex-gender. The very problematic "object" of feminism has been woman, but woman "under erasure". (See especially the journals, Questions Feministes 1977-80 and Feminist Issues from 1980). But note that "in the beginning" feminist theory reconstructed its object, so that a feminist theory of woman is used as a lens to see the universal (or exceedingly common) domination of women, rather than the historic unity of man and his emerging project of self realization in the activities of men. Alternatively, feminist theory uses a reconstructed version of woman to insist on the dispersion of the

category, the irreducibility of the differences among women to any single category woman. Woman is plural here; the word granulates in one's mouth. (Sandoval n.d.) Among the possibilities opened by this strategy in theory is the longed-for discovery that women have not always been subject to male domination, that hope is also in the past and not only the future. (Rosaldo 1980). Also opened up is the knowledge that women are also practiced dominators.

So feminist theory creates a genealogy with the aid of the operator of sex-gender. A genealogy is an origin story; it assigns positions from which meaning flows. Primatology is inherently a genealogical practice in this sense. Within the field of primatology, all the possible positions for the meaning of being female can be and are being generated. Primatology is a field for contesting basic categories structured by the axis or net of sex-gender. The possible meanings of being female in the primate order are at the center of primatological discourse. The constantly ambiguous, equivocating objects and boundaries of primatology are made for this discourse. What is female to woman? female to females? woman to women? What is at stake, and for whom, in recording the intimate details of the lives of female and male baboons and chimpanzees?

Sex, the raw material of gender, remains a kind of generative resource, potentially free and freeing, but everywhere bound by the politics of gender. Potency has always seemed more innocent than act. The "end of gender" then becomes one possible feminist goal, a very tantalizing one. The very category "woman" is a scandal necessitating the end of the conditions which produced it. But if "gender" goes, so must "sex", just as the "West" cannot be held together without its "others" and vice versa. For feminist theory, a core problem has been the prior construction of woman/female within a hostile social and epistemic field structured by the nature-culture axis or net, as well as the sex-gender axis. But although it is clear woman is the (political) gender of the (constructed) sex female, what are women? (Men also have an odd relation to man, not to mention to male. But it's not a random relation.) What is the object (both goal and subject matter) of feminism? What is the "natural-technical object of knowledge" of feminism considered as a "human" and a "natural" science? How does the object of feminist theory and practice relate to the "natural-technical objects", in both senses, of primatology?

Animals, especially the boundary animals which primates are pre-eminently, serve as special objects for understanding the origins of socialized sex, almost gendered sex. This is serious business in the politics of domination and liberation, in which the source of energy, the self-replenishing luminescence outside the dead light of reason, must be located -- and appropriated in another chapter in the story of domination. Culture and personality studies have turned regularly to the psychobiology of sex for good reason. The boundary between sex and gender, ever invisible but ever essential to visualize, must be sought. The boundary between sex and gender is the boundary between animal and human, a very potent optical illusion and technical achievement. Primatologists, including women primatologists, have focused extra-ordinary attention on sexual behavior. It readily carries the critical meanings in the origin of sociality explored through the logic of nature and culture.

Women primatologists have focused on female primates' sex (sexuality? is that term reserved for humans?) partly to remove it from the inert, natural state it attained in the texts of their primatological brothers. The category female has been reconstructed in ways analogous to reconstructions of the category woman. Female sex was mere resource for male action that got animals to the border of humanity. But no more; female sex now has the promising dual properties, both active and natural, that let it serve also as the mediator for the passage to culture. No longer just the tokens of male exchange, female primates have become sexual brokers in their own right. Female sex has become very active, social, and interesting -- not to mention orgasmic across the primate order -- in the last 15 years. (Burton 1971, Chevalier-Skolnikoff 1974, Lancaster 1979, Foucault 1978). Solly Zuckerman (1932) would hardly recognize primate society. Female sex has been socialized and actualized, a critical move to make females political actors within the epistemic fields I am trying to characterize. One expected result is that females also get to have strategic reason to manage their investments wisely, a fine twist on "maternal thinking". (Ruddick 1982, Altmann 1980). Nice to be "informed".

The plethora of retold tales in the complex history of primate studies raises the central question of this essay: Is there any other possible meaning for politics, the classic project to craft a public world from the chaos of difference, than those of war and domination, masked by logics of exchange? (Hartsock 1983a). Have the simian lives narrated by women scientists really been different? Like that model of individuality and community, the slime mold, might primatology have some fruiting bodies rising from its hungry utopian project which would seed new meanings of power? Without prejudicing before the end of the paper the reader's opinions on these authorial intentions, let me suggest some mediate conclusions to guide reading.

First, although primatology is full of ideology in the old simple senses, it is dull and wrong to consider the matter of sexual politics addressed through unmasking ideology. There is no conspiracy of capitalist patriarchs in the sky to create a science of animal behavior to naturalize the fantasies of 20th century American white males, no matter how tempting the evidence sometimes seems. And struggles for a feminist science cannot proceed only by writing the tales one wants to be true, though "we" all do it. It is important not to trivialize the very real difficulty of good scientific story telling. Gender and sex are central to the constitution of primatology, but in constantly complex ways in interaction with multiple other interlacing, structuring axes which form the web of western discourses. The very constitution of sex and gender as objects and conditions of knowledge -- and so political categories -- is at issue in feminism and in feminist readings/productions of primatology.

One of my primate informants, a senior male scientist, argued sex and gender do matter in primate science, determining how one knows, but the "variable" is swamped by a host of others obscuring differences between the sciences women and men craft. I am arguing he suggested the wrong metaphors. We are not looking at "variables"

which could be ranged as dependent and independent and perhaps weighted through a savvy application of multivariate analysis, nor for essential differences between the practices of women and men as solutions to the key questions, though those differences are not trivial. We are looking instead at the practical and theoretical constructions of a narrative field in which the explanatory model is better drawn from semiotics and hermeneutics than from statistics. But I hope for a politicized semiotics, where politics are the search for a public world through many socially grounded practices, including primatology. How could primatology not be a territory of feminist struggle? Western women's place is indeed in the jungle. Whether other women and men occupy that material/mythic space when they watch monkeys and apes is a function of other histories and other stories.

## 2. The Jungle: Scenes

In moderation numbers never grounded the flight of interpretation. About how many women practice primatology for a living? That question is difficult to answer for many reasons. My focus is on field primatology, i.e., studies of wild or semi-free ranging but provisioned animals in an environment that can be epistemically constructed to be "natural", a possible scene of evolutionary origins. But primatology is both a laboratory and field science that crosses dozens of disciplinary boundaries in zoology, ecology, anthropology, psychology, parasitology, biomedical research, psychiatry, conservation, demography, and so on. There are three major professional associations to which primatologists from the United States are likely to belong, but many of the individuals who have made major contributions and who allowed me to interview them and have access to their unpublished papers do not appear on the membership lists ever or for several years at a time.

Making many assumptions, I will use membership lists from the American Association of Physical Anthropology (AAPA), the American Society of Primatologists (ASP), and the International Primatological Society (IPS) around 1980 to suggest the present level of participation of women in field primatology. These global disciplinary counts would give a minimum picture, because there is good reason to believe women are more heavily represented in field primatology than in exclusively laboratory-based practices, and they have been more authoritative in field primatology whatever their numbers. There is no absolute division between field and lab, but there is a tense difference of emphasis, despite the official doctrine that naturalistic studies require complementary laboratory studies with their greater power of experimental manipulation.

I am ignoring the large issue of skewed emphasis from concentrating on North Americans, with nods to the British, despite the important fact that primatology emerged as an international passion from the late 1950s. With a few important exceptions, the authoritative spokeswomen and the largest female numbers in primatology have been United States nationals, trained in U.S. institutions, and/or employed in U.S. institutions. The overwhelming majority, relatively more than for other biological sciences, have been white, although that is now changing.

In 1977-78, the IPS (founded 1966) roster listed 751 members, of whom 382 listed U.S. addresses, 92 U.K. addresses, 115 Japanese, 14 African (10 from South Africa), and 151 other locations. In the IPS, overall women were 20% of the membership: 22% of the U.S. total, 22% of the British, 9% of the Japanese, and 24 % of the "other". Many individuals could not be identified by gender from initials; they were left out of these calculations, probably resulting in understating the representation of women. By sub-discipline, women accounted for 22% of the anthropologists, 12% of the medical researchers, 27% of the psychologists, 19% of those involved primarily with zoos or wildlife conservation, 19% of the zoologists or ecologists, 25% in other categories. (Percentages of total membership that could be ascribed to these subdisciplines are 17% for anthropology, 20% for medicine, 16% for psychology, 3% in zoos and wildlife, 9% of the zoologists or ecologists, and 25% for other.) In a rough way, women are relatively over-represented (if that word can make sense where the level never equals 30%!) in anthropology, psychology, and "other", and present in zoos and wildlife and zoology and ecology in numbers about proportional to their presence in the Society. Women are under-represented in medicine. The very low number of Japanese women, despite the prominence of Japanese primatology internationally, is echoed in the difficulty of finding out much (using English-language sources) about them as individual researchers. This is in dismaying contrast to the prominence of western women in the field.

The 1979 roster of the AAPA (founded 1918) lists 1200 persons, about 26% of whom appear to be women. Physical anthropologists have traditionally taught in medical schools and sought positions in museums, but that generalization is weak by 1980. The 1980 roster of the ASP (founded 1966) lists 445 individuals, of whom only 23 are foreign, largely Canadian. About 30% of the ASP are women, including 45% of those who give themselves an anthropology-related address. Such an address reflects the fact that academic jobs for primatologists, whatever their discipline of training, are often in anthropology departments. About 24% of the psychologists are women, 36% of those in zoos or wildlife conservation, 20% of the total in zoology/ecology, and 47% of those whose interests intersect with psychiatry (compared to 11% in the IPS). Women primatologists appear to be trained in and/or have jobs in anthropology in proportions considerably higher than their representation in the association as a whole. The reverse appears to be true for zoology/ecology. Note that U.S. women primatologists appear to be more likely to join the American society than the international association, compared to U.S. men.

For comparison, the January 1982 National Science Foundation publication Women and Minorities in Science and Engineering notes that by 1978 in the U.S. women represented about 20% of employed social, life, and mathematical scientists, but only 9.4% of all employed scientists and engineers. (Contrast that with women's figure of 43% of all professional and related workers, disregarding stratification in what counts as professional, let alone "related".) About 85% of growth in employment of women doctoral scientists from 1973-1978 was in life sciences, social sciences, and psychology. Together life sciences (30%), social sciences (17.2%), and psychology (14.7%) account for 61.9% of women scientists. This is the pool from which

primatologists come, and they come in numbers roughly characteristic of other life and social sciences. Nowhere does the representation of women equal 30% of these global field listings. Except in psychology, in no category of sciences does the representation of doctoral women equal 20%. In the face of these unspectacular showings, women primatologists stand out slightly. Their impact has been greater than their numbers, compared to most other areas of anthropology and all other areas of biology. For this conclusion, I turn to their practice and their publications.

Field primatology is a recent undertaking, where almost all work has been done since the late 1950s; the period since 1975 represents the steepest growth of primate field studies. The explosive growth of primatology has overlapped the "second wave" of the Euro-American women's movements. Young women and men entering primatology in those years could not be unaware that their field was contested from the "outside", in gender politics and much else. It was also contested from the "inside". One result was the explosion of writing by women on primate society and behavior, both for popular and professional readerships. The following lists, consisting only of books, hardly the major form of publishing especially in natural sciences, is not exhaustive; but it gives the flavor of abundance and a chronology showing the steady rise in women's production of primatology.

Nadie Kohts, Untersuchungen über die erkenntniss Fähigkeiten des Schimpanzen aus dem zoopsychologischen Laboratorium des Museum Darwinianum in Moskau (Moscow, 1923), opens my list in order immediately to transgress the categories of American, post-World War II, and field primatology, and also just to honor an important predecessor in the appreciation of primate mind. I include the next entry to mark the frequent role of the officially non-scientist wife, who contributed substantially to the production of the primate text: Robert Yerkes and Ada Yerkes, The Great Apes (New Haven: Yale UP, 1929). The next entry is probably also little known except to the aficionada/os of apes, but she marks several categories important to gender in primatology: zoo work, lay status, success in ape breeding-- Belle Benchley, My Friends the Apes (Boston: Little, 1942). These three pre-World War II names are also included to underline my inability to find a single book, popular or professional, about primates by a Ph.D. woman scientist in the world before the 1960s. There are several by men.

Then comes the best known name of all, beginning a chronological list of professional biologists and anthropologists writing for many audiences: Jane van Lawick Goodall, "My Friends the Wild Chimpanzees" (Washington, D.C.: National Geographic, 1967) followed by In the Shadow of Man (Boston: Houghton Mifflin, 1971); Thelma Rowell, Social Behaviour of Monkeys (Baltimore: Penguin, 1972); Alison Jolly, Lemur Behavior (Chicago: Chicago UP, 1966), The Evolution of Primate Behavior (N.Y.: Macmillan, 1972); Jane Lancaster, Primate Behavior and the Emergence of Human Culture (N.Y.: Holt, Rinehart and Winston, 1975); Sarah Blaffer Hrdy, Langurs of Abu (Cambridge: Harvard, 1977) and The Woman That Never Evolved (Cambridge: Harvard, 1981); Alison Richard, Behavioral Variation (Lewisburg: Bucknell, 1978) and Primates in Nature (forthcoming, in ms. 1982); Jeanne Altmann, Baboon Mothers and Infants (Cambridge: Harvard, 1980); Katie Milton, The

Foraging Strategies of Howler Monkeys (N.Y.: Columbia UP, 1980); Nancy Tanner, On Becoming Human (London: Cambridge UP, 1981); Linda Marie Fedigan, Primate Paradigms (Montreal: Eden, 1982); Adrienne Zihlman, Human Evolution Coloring Book (N.Y.: Barnes and Noble, 1982); Dian Fossey, Gorillas in the Mist (Boston: Houghton Mifflin, 1983). Several other books are in progress.

A larger picture emerges if we consider the profusion of books focused on debates about sex and gender which take serious account of the work by women primatologists and reconstructed men primatologists. Every one of these books is part of a large international social struggle, especially from the 1960s on, about the political-symbolic-social structure, history (natural and otherwise), and future of woman/women. The political struggles are not context to the written texts. The women's movements, for example, are not the "outside" to some other "inside". The written texts are part of the political struggle, but a struggle conducted with very specific "scientific" means, including possible stories in the narrative field of primatology. By definition, the origin point has to be outside the history I will tell, therefore consider first the unique, renegade pre-1960s classic, a book that is to female primates and feminist primatology as Simone de Beauvoir's Second Sex is to feminist theory of the second wave: Ruth Hershberger, Adam's Rib (N.Y.: Pellegrini and Cudahy, 1948, reissued in paper by Harper and Row, 1970, hardly an accidental date). Hershberger's dedication of the book to G.E.H., G. Evelyn Hutchinson, a major scientist who has made a habit of supporting heterodox women scientists, also marks the crucial importance of pro-feminist men in the pre-history of feminist struggles for science.

A title from the 1960s gives the starting point for thinking about females with regard to (zoological) class, but note how the field expands through the 1970s, when maternal behavior is no longer the totally constraining definition of what it means to be female: Harriet Rheingold, ed., Maternal Behavior in Mammals (N.Y.: Wiley, 1963); Elaine Morgan, Descent of Woman (N.Y.: Stein and Day, 1972); Carol Travis, ed., The Female Experience; Rayna Rapp Reiter, ed., Toward an Anthropology of Women (N.Y.: Monthly Review Press, 1974), with the "classic" paper by Sally Linton, "Woman the gatherer: male bias in anthropology"; Evelyn Reed, Woman's Evolution (N.Y.: Pathfinder, 1975); M. Kay Martin and Barbara Voorhies, Female of the Species (N.Y.: Columbia UP, 1975, dedicated to Margaret Mead); Ruby Röhrlich Leavitt, Peacable Primates and Gentle People (N.Y.: Harper and Row, 1975); Cynthia Moss, Portraits in the Wild (Boston: Houghton Mifflin, 1975); Bettyann Kevles, Watching the Wild Apes (N.Y.: Dutton, 1976); H. Katchadourian, ed., Human Sexuality: A Comparative and Developmental Perspective (Los Angeles: Univ. of Calif. Press, 1978); Lila Leibowitz, Females, and Families: A Biosocial Approach (Belmont, CA: Duxbury, 1978); Lionel Tiger and Heather Fowler, eds. Female Hierarchies (Chicago: Beresford, 1978); W. Miller and L. Newman, eds., The First Child and Family Formation (NC: Carolina Population Center Publications, 1978); Elizabeth Fisher, Woman's Creation: Sexual Evolution and the Shaping of Society (N.Y.: McGraw-Hill, 1979); Frances Dahlberg, ed., Woman the Gatherer (N.H.: Yale UP, 1981); Helen Fisher, The Sex Contract: The Evolution of Human Behavior (N.Y.: Morrow, 1982); Ruth Bleier, Science and Gender: A

Critique of Biology and Its Theories on Women (N.Y.: Pergamon, 1984). It would be a serious mistake to leave out science fiction, which is both influenced by and an influence on the struggles over sex and gender in primatology, e.g., Jean Auel's Clan of the Cave Bear, Marge Piercy's Woman on the Edge of Time, and the bio-fiction of C.J. Cherryh and James Tiptree, Jr., both women science fiction writers despite nominal appearances.

The above list is heterogeneous from several points of view -- political allegiance, intended audience, credentials of the authors and editors, publishing format, genre, etc. Interestingly, it is nationally and racially homogeneous; this point matters in view of the universalizing tendency of the literature, which repeatedly seeks to be about the nature of "woman". No one could claim from any of the lists in this paper that white U.S. women occupy a unified ideological space or are in any simple sense "in opposition" to masculinist positions, much less to men. But it should also be impossible to miss the collective impact of these public, ordered stories: new lines of force are present in the primate field. It has become impossible to hear the same silences in any text. The narrative field has been restructured by a polyphony rising from alalia to heteroglossia. In the practice of telling important origin stories among peoples of the Book, women now also speak in tongues, imagining female within a native language. (Elgin 1984).

Volumes edited or co-edited by professional primatological women produce another long list that begins with the publication of the papers from Phyllis Jay's 1965 Wenner Gren conference. (Jay 1968). The list ends for now with a spate of books published in the mid 1980s. These books mark the newly hegemonic place of "sociobiological theory" in primate studies and the complex place of sociobiology in the crafting of self-consciously pro-female and often feminist accounts of primate, and indeed vertebrate, evolution, behavior, and ecology. (Hausfater and Hrdy 1984, Wasser 1983, Small 1984). Meredith Small's collection, Female Primates: Studies by Women Primatologists is explicitly a kind of celebration of female primates, human and animal, in collaboration to write primatology. It is also published as Volume 4 of Monographs in Primatology under the scrutiny of a 9 member editorial board, only one of whom (Jeanne Altmann) is a woman. The editor is a graduate student, and she was explicitly encouraged by her male advisor, Peter Rodman. Female Primates includes 21 women and 1 man (as a co-author) among its authors. The range of concerns includes post-menopausal animals, female adolescence, female sexual exuberance, feeding strategies, mating systems explained from the point of view of female biology as the independent variable, and much else. Any notion that the book might be pollutingly popular should be nipped by a combination of style and a \$58 price tag; it is professional to the core.

Because it is a kind of summing up and celebration of primate females and the women who made them visible, i.e., a construction of a "we", Female Primates deserves a full analysis, but for now I will content myself with a brief look at two pieces for their strategy in introducing subsequent papers and thus framing the whole enterprise. Each piece raises the question of the difference it makes that women do primatology focused on female animals, but each also adopts a



philosophy of science and ideology of progressive improvement of knowledge which block an investigation of an epistemic field structured by sex and gender. From the point of view of the framing pieces, "male bias" exists but can be corrected fairly simply. There is no need for dangerously political social relations within primatology and no need for the matter to challenge the practitioners' "native" account of how knowledge is made, at least not in public. Bias cancels bias; cumulative knowledge emerges. The root reasons given, however, hint at a stronger position: only bias ("empathy") permits certain "real" phenomena to be knowable, or only explanation from the point of view of one group, not the point of view of an illusory whole which actually masks an interested part, gets at the "real" world. In this case bias or point of view turn out to be the social and epistemic operator, sex-gender. The major scientific-political question is how such a potent point of view is constructed. In the construction of the female animal, the primatologist is also reconstructed, given a new genealogy. But the rebirth is within the boundaries of the "West", within its ubiquitous web of nature-culture. Primatology is simian orientalism. (Said 1978).

Jane Lancaster, a Ph.D. student of Sherwood Washburn at UC Berkeley in 1967 and a senior student of primate behavior from anthropological points of view, introduced the volume as a whole. The introduction is remarkable for its adherence to sociobiological and socioecological perspectives; it is a sign of the triumphant status of those explanatory frameworks in evolutionary biology, including primatology by the mid 1980s. Within that frame, Lancaster looks at primate field studies to understand four areas of sexual dimorphism: "sex differences in dominance, mating behavior and sexual assertiveness, attachment to home range and the natal group, and the ecological and social correlates of sex difference and body size." (Lancaster in Small 1984, pp. 7-8). In each case, the point is that "females too do x". It turns out that 1) females are competitive and take dominance seriously; 2) females too wander and are not embodiments of social attachment and conservatism; 3) females too are sexually assertive; and 4) females have energy demands in their lives as great as those of males. Focus is on females and not on "the species as evolving as an amorphous whole. We explore the social world of females rather than that of the social group... . We learn to understand the reproductive strategies of females and to balance these strategies against those pursued by males of their social systems... . At last we are coming to a point of balance where the behaviors and adaptations of the sexes are equally weighted." (Lancaster in Small 1984, p. 8). Finding females means disrupting a previous whole, now called "amorphous", rather than the achieved potential of the species. Feminism absolutely requires breaking up some versions of a "we" and constructing others.

Lancaster's is a very interesting construction of a "we", where the boundary between female animal and woman primatologist is blurred, ambiguous. The deliberately ambiguous title of the whole volume is echoed again and again: "we" are all female primates here, outside of history in the original garden. That garden naturally turns out to be in the liberal "West". Competition, mobility, sexuality, and energy: these are the marks of individuality, of value, of first or primate citizenship. "Balance" is equality in these matters, hard won from

specific attention to the point of view not of the "amorphous whole" but of "the social world of females". Lancaster's is an origin story about property in the individual body; it is a classic entry in the large text of liberal political theory, rewritten in the language of reproductive strategy. Sex and mind again are mutually determining. In the reconstruction of the female primate as an active generator of primate society through active sexuality, physical mobility, energetic demands on self and environment, and social competition, the woman "primatologist", i.e., female (human) nature, is reconstructed to have the capacity to be a citizen, a member of a public "we", one who constructs public knowledge, a scientist. Science is very sexy, a question of eros and power. Appropriately, this "we" is born in an origin story, a time machine for beginning history, therefore outside history.

Thelma Rowell, a senior zoologist at the University of California at Berkeley who has played a major role in disrupting stories about primate social behavior, especially stories about dominance (Rowell 1974), was invited to introduce the first sub-collection of papers called Mothers, Infants, and Adolescents. Rowell's message as always was about complexity. She is not hesitant to point out the legacy of male bias in primatology, e.g., in the classification of females as juvenile or adult exclusively as a function of their capacity to breed, while males were categorized by a whole series of stages grounded in social as well as minimal reproductive functions. "For that matter, there is little recognition of continued social development in human females, which for most purposes are also classified as either juvenile or old enough to breed. In contrast, continued social development following puberty in males was recognized in the earliest studies of primate social behavior, just as the stages of seniority are often formally recognized among men. This dual standard has, I think, delayed our understanding of primate social organization." (Rowell in Small 1984, p. 14). She points out the merit of the following papers in seeing the primate world from the "female monkey's point of view" and thereby "challenging accepted explanations". She goes further, writing, "I have a feeling it is easier for females to empathize with females, and that empathy is a covertly accepted aspect of primate studies -- because it produces results." (Rowell in Small 1984, p. 16).

But she backs off from exploring unsettling implications of these positions about the structuring of the observer determining the possibility of seeing. Instead, because males identify with males and females with females and primatology attracts both human genders, the result is additive, canceling out "bias" and leading toward cumulative progress: "The resulting stereoscopic picture of social behavior of primates is more sophisticated than that current for other groups [of mammals]." (p. 16). But the stories are not stereoscopic, where the images from separated eyes are interpreted by a higher nervous center; they are disruptive and restructuring of fields of knowledge and practice. The reader is not an optic tectum, but a party to the fray, so hope for higher integration from that source is futile.

Further, "empathy" produces results in human anthropology as well, forming part of a very mixed legacy that includes universalizing, identification, and denial of difference, as the "other" is

appropriated to the explanatory strategy of the writer. Empathy is part of the western scientific tool kit, kept in constant productive tension with its twin, objectivity. Empathy is coded dark, covert or implicit, and objectivity light, acknowledged or explicit. But each constructs the other in the history of modern "western" science, just as nature-culture and woman-man are mutually constructed in a logic of appropriation and progress.<sup>10</sup> When Lancaster wants to see "balance" and Rowell writes about a "stereoscopic picture", they simultaneously raise and dismiss the messy matter of scientific constructions of sex and gender as objects of knowledge and as conditions of knowing. Official (or native) philosophies of science among researchers obscure the complexity of their practice and the politics of "our" knowledge.

The portrait of publishing and rough numerical representation needs to be complemented by a brief survey of the major institutions that have produced women scientists in the field. Women's professional practice in field primatology has meant access, submission, and contribution to the institutional means of producing knowledge. Despite the National Geographic's imagery of Jane alone in the jungle with the apes, a Ph.D. is bestowed for social work, often experienced as lonely and sometimes named as alienated, in a different sort of jungle where monkeys and apes are transcribed into texts, or more recently coded onto tape.<sup>11</sup>

Women did not earn Ph.D's for research on primate behavior randomly from all possible doctorate granting institutions where people did such work. For example, Harry Harlow's laboratories at the University of Wisconsin were particularly impoverished in human female doctoral fauna. That fact contributes to the pattern of more women in the field than in lab-based psychological primatology. Two universities were initially crucial, the Anthropology Department of the University of California at Berkeley and the sub-Department of Animal Behavior of Cambridge University at Madingley. By the 1970s, Stanford University's Program in Human Biology, with its ties to Gombe and its captive chimpanzee colony, and Harvard University's program in physical anthropology became important from the points of view of this paper.

My counts are not final, but from Sherwood Washburn's initiation of the seminar on the Origins of Human Behavior at the University of Chicago in 1957-58 and his move to Berkeley in 1958, with the establishment of an animal behavior experimental station and field studies of primates all over the world, until his retirement from UCB in 1980, at least 18 women earned Ph.D's for work on primate evolution and behavior in a program deeply influenced by his plans for reconstructing physical anthropology and the explanations of human evolution. Many of those women were the students of Washburn's former student, Phyllis (Jay) Dolhinow, who joined UCB's faculty in 1966. The UCB program has been famous for its unusually large number of women students in the early years of post war primatology. The role of Washburn in the accomplishments of his students is controversial and many other figures were crucial to their intellectual formation, e.g., Peter Marler, Frank Beach, and Thelma Rowell. But the program founded and sustained by Washburn's power in physical anthropology was the route to credentials for the U.S. women until the late 1970s, as well as most of the men through the 1960s.

Many of the UCB women have been leaders in reconstructions of sex and gender in primate telling. They provided peer cohorts for each other during graduate school and have formed critical support networks in later professional life. Their relationships with their male student peers are an important part of the story. There are several "generations" of UCB primate women, not to mention individual heterogeneity, and generalizations are tricky. Their strengths and limitations are controversial and are germane to the debates about explanatory powers of sociobiology and socioecology compared to evolutionary structural functionalism. The academic entrepreneurship of Washburn mattered enormously to the professional status and opportunities of these women and their male peers. A fruitful way to follow their collective fates is by tracing the conferences funded by the Wenner-Gren Foundation from the high point of the Washburn network's influence in the early 1960s to the ascendancy of sociobiology/socioecology, that is from the 1958 Darwin Centennial at the University of Chicago organized by Sol Tax, and the follow up 1965 conference, called inescapably the "Origin of Man", to the 1982 conference on "Infanticide in Animals and Man".

Like Washburn, Robert Hinde of Cambridge has sponsored the doctoral work of a significant number of the important women primatologists, including Jane Goodall and Dian Fossey of National Geographic fame. At least as important has been the work of Thelma Rowell, an early Hinde student, who, after several years at Makerere University in Uganda, moved to the Zoology Department at UCB, where her presence has made a major difference to the primate students in the Anthropology Department as well, perhaps especially the women. My interview informants have argued that Goodall and Rowell were critical to Hinde's theoretical and methodological development, leading him to see beyond Lorenz and Tinbergen to the complexity and individuality of primate behavior. Including Ph.D. students and post doctoral associates, since 1959 about 15-20 women primatologists have been associated with Hinde's laboratory at Madingley. The approach of his lab may be followed in a recent collected volume. (Hinde 1983). Many of these students have been Americans who earned their Ph.D.'s in the U.S. and did post doctoral work associated with Madingley or vice versa. Networks of institutions and researchers are probably a more useful way to trace primate lineages than dissertation advisors. Crucial in these networks are the long term field sites, like Gombe, Amboseli, Gilgil, Cayo Santiago, and a few others. Among the Gombe field workers, there have been at least 35 women, including non-doctoral research assistants.

Stanford University was for a time at a nodal point of institutions and field sites, connected especially to UCB and Gombe. The entrepreneurship of David Hamburg was crucial. Hamburg and Washburn linked worlds in the year-long primate meeting at the Stanford Center for Advanced Study in the Behavioral Sciences in 1962-63, resulting in one of the first volumes on modern primate studies. (DeVore 1965). Hamburg was responsible for Stanford's several year fruitful collaboration with Jane Goodall and primate research at the Gombe Stream National Park in Tanzania, a collaboration that broke up tragically with the kidnapping of Stanford graduate students at Gombe in 1975. But during the Hamburg-Goodall years, several primate

students were formed, including many women whose networks have been part of the re-structuring of primatology since the challenges of sociobiology of the mid 1970s. Stanford women, former undergraduates as well as graduate students, have important ties with other central institutions grounding primate research. In addition to Gombe, they have worked at Harvard, Cambridge, UC Davis, Kekopey Ranch at Gilgil, Amboseli and the University of Chicago, the Rockefeller University's research station at Millbrook, and other places. Their ties with each other and male peers were crucial to setting up a second primate year at the Center for Advanced Study in the Behavioral Sciences in 1983-84 to produce another volume reflecting the recently ascendant explanatory frameworks. It is certain that reconstructed female animals, as well as women<sup>12</sup> primatologists, will occupy very active positions in that text.

Irven DeVore has been the dominant figure in Harvard's program in physical anthropology since he finished his Ph.D. in 1962, from many accounts as Washburn's favored son. DeVore's early baboon field study was a central leg of the man the hunter research program, and the male orientation of that baboon report has been notorious. (It has also been the standard source for school text books and the TimeLife series on animals. The man the hunter program was "tri-pedal", with legs in functional anatomy, primate field studies, and anthropological investigation of human hunter-gatherers. Richard Lee, also from the Washburn UCB world, partly in collaboration with DeVore, has been of fundamental importance here. Lee's pro-feminist reputation and publications contrast markedly with DeVore's.) DeVore's undergraduate course in primate behavior at Harvard has been immensely popular, and since DeVore's famous "conversion" to sociobiology (to Washburn's great dismay) in the 1970s, that course and his graduate primate seminar have been important institutional mechanisms for reproducing the explanatory strategy in younger workers. Robert Trivers' tutelage of DeVore has been a central feature of the framework. It also appears that in the first sociobiological years the seminars were classically "male-dominated", by faculty and students.

But then the name of Sarah Blaffer Hrdy begins to appear in print and in my informants' accounts. An unrepentant sociobiologist, she has centered females in her accounts in ways that have destabilized generalizations about what "sociobiology" must say about female animals or human women. She is also an unrepentant feminist, greatly admired by the reviewer of her Woman That Never Evolved in Off Our Backs, the major national radical feminist newsprint publication in the U.S., and greatly criticized by socialist feminist opponents of liberal political theory, including its sociobiological variants. I have been in the latter camp, but fortunately Hrdy is not so easily bundled off. She is considerably more complex than the labels imply. Hrdy is controversial on several accounts, from how she is perceived in relation to other women to the politics and science of her field work and writing. In the present context, her role in the Harvard primate seminars is at issue. Women students who came to Harvard for graduate work after Hrdy consistently name her presence as a crucial supportive factor making a major difference in their own confidence and intellectual power. They formed cohorts with each other and regarded Hrdy as a kind of elder sister. These networks ground much of the currently interesting reconstructions of primate females and

primate society as a disrupted "whole".

One last locus should be characterized: the savannah baboon research project in Amboseli National Park in Kenya and the Department of Biology (Allee Laboratory of Animal Behavior) at the University of Chicago, where Jeanne Altmann and Stuart Altmann have worked since 1970. The pattern of the married couple in primatology has been an important one, with the husband regularly better known, etc., etc. In some ways, the Altmann picture was similar, but there are refreshing differences which matter in the reconstruction of primatology. Jeanne Altmann has been important in primate field studies since she began working with Stuart Altmann in the early 1960s, but she earned her Ph.D. only in 1979, with a dissertation ("Ecology of Motherhood and Early Infancy") submitted to the University of Chicago Committee on Human Development. The dissertation was a version of her important book (1980). In 1974, Jeanne Altmann published one of the most cited papers in field primatology, "Observational study of behavior: sampling methods." The simple title belies the importance of the paper in setting standards for non-experimental research design, especially if the observer has any hope of doing reliable statistical analyses. Initially, J. Altmann, without a Ph.D., was rarely invited to conferences unless her husband was also invited. Progressively, she is a power in her own right in the field. Jeanne Altmann is cited by my younger informants as a significant node in developing "invisible colleges" among women. Her importance is loosely analogous to Lillian Gilbreth's in the history of personnel management research in the early years of labor studies right after the triumph of Taylorism. Gilbreth was a major theorist in this area of capitalist science. Jeanne Altmann is a theorist of the ergonomics of baboon motherhood, where ergonomics is a kind of cybernetics of the division of labor and a crucial concept in the deep construction of nature as a problem in investment strategy. (Trescott 1984).

### 3. The Text: Representations

Stories of the nature and possibility of citizenship and politics in western traditions regularly turn on versions of the origin of "the family". The stage has been set, so let us conclude with deliberately parodic, humorous tales by Adrienne Zihlman and Sarah Hrdy, two bio-anthropologists otherwise committed to very different story-telling strategies.

Both Hrdy and Zihlman are unrepentant feminists, convinced that such commitments matter to their doing good science. Their meanings of feminism and their ways of doing science are in sharp conflict, but they both take "stories" seriously as part of their craft, not spare-time pursuits. Their task, within the contested constraints of discourses structured by nature/culture and sex/gender, is to give an evolutionary account of the human place in nature and society. Their best writing displays a complex reflexiveness about their own ideologies that emerges through conscious oppositional practice within simultaneously privileged and oppressive contexts. Hrdy and Zihlman are both "Milton's daughters". Neither had the luxury of professional formation in a symbolic culture and historical society whose stories and sciences were friendly to them and their kind. They inherited another status. They nonetheless had access to the resources of

culturally authoritative story telling -- Ph.D's from major institutions in science, significant financial resources from their class and race positions, and the intellectual and emotional riches of a world-wide feminist resurgence coinciding with critical periods of their professional and personal formation. As "Milton's daughters", these female scientists once read "to" the blind father, but they also read the Book of nature for their own purposes. Zihlman has retold the inherited stories of "man the hunter", beginning within the constraints of structural-functional physical anthropology. Hrdy has recast the plots and characters of sociobiology, turning unpromising material into scientific and ideological resource.

The tales considered here were told in response to interpretations of the recent reappearance in the paleoanthropological field in Haadar, Ethiopia, of a diminutive, ancient (say 3 million year-old) hominid grandmother -- of erect and bipedal habit, but small mind -- named by her adamic founders, Lucy, after the drug culture that gave their generation of students historical identity. (Johanson and Edey 1981). The reference was to "Lucy in the Sky with Diamonds". Lucy could be Lucien, but let's give her her sex, since it is crucial to the story at hand. The paucity of African names in paleo-anthropological and primatological literature says a fair amount about the limitations of Adam's claim to species fatherhood.) Lucy's near-complete skeleton was dug out of the earth by the skilled hands of a brotherhood, which recognized in her and associated skeletons a resource for re-establishing potent masculinist versions of "The Origin of Man". (Lovejoy 1981). Lucy was quickly made into a hominid mother and faithful wife, a more efficient reproducing machine than her apish sisters and a reliable, if poorly upholstered, sex doll. These are the qualities essential to the male-dominant, "monogamous", heterosexual family, named "the family" with mind-numbing regularity. Lucy's bones were incorporated into a scientific fetish-fantasy, dubbed irreverently the "love and joy" hypothesis in Sarah Hrdy's response. (Hrdy and Bennett 1981, p. 7). But women still "dub", while men "name".

What makes Lovejoy's interpretations of Lucy "masculinist", as opposed to simply distasteful and controversial for his scientific opponents? The answer is his unwitting discipleship to the father of biology, Aristotle. Lovejoy's "Origin of Man" is enmeshed in the narrative of active, potent, dynamic, self-realizing manhood achieving humanity through reproductive politics: paternity is the key to humanity. And paternity is a world historical achievement. Maternity is inherently conservative and requires husbanding to become truly fruitful, to move from animal to human. Standard in western masculinist accounts, disconnection from the category "nature" is essential to man's natural place: human self realization (transcendence, culture) requires it. Here is the node where nature/culture and sex/gender intersect.

Lovejoy argues that the transition to a savannah-mosaic environment at the temporal boundary (late Miocene) marking hominization placed pre-hominids in a reproductive crisis requiring either closer birth spacing or greater survivorship of offspring or both. Expulsion from the forest garden meant a reproductive burden of species-making proportions. The narrative of matrifocal, female-centered worlds of

apes had to give way to the more dynamic "human" family. "In the proposed hominid reproductive strategy, the process of pair bonding would not only lead to direct involvement of males in the survivorship of offspring[;] in primates as intelligent as extant hominoids, it would establish paternity, and thus lead to a gradual replacement of the matrifocal group by a 'bifocal' one -- the primitive nuclear family." (Lovejoy 1981, pp. 347-348). The anthropologist Carol Delaney (1985) has pointed out that paternity, in the hoary disputes in her discipline about whether real human peoples ever lived who really did not know about it, does not mean simply knowledge of a male biological contribution in conception. In western patriarchal culture, it means what Aristotle meant: male reproductive causality in the medium of the receptive female. The blindness induced by masculinist privilege in the culture of the anthropologist made their own specific meaning of paternity opaque to them; so they sought to account for difference as irrationality or immaturity. But Lovejoy is clear about the definition; it is a question of rational property in children.

Nothing a female could do could lead the species across the hominoid-hominid boundary; she was already doing the best nature allowed. "She would have to devote more energy to parenting. But natural selection has already perfected her maternal skills over the millions of years her ancestors have occupied West Africa. There is, however, an untapped pool of reproductive energy in most primate species -- the male." (Lovejoy 1984, p. 26). Through provisioning his now pair-bonded and sedentary mate at a home base with the fruits of plant and small animal gathering, a male could lead the species across the boundary to the origin of man in the assurance of fatherhood. Lovejoy gave up hunting to mark manhood, but he could not dispense with paternity. Mothers could have lots of babies, the role Theodore Roosevelt so hoped for in his 1905 analysis of modern (white) "race suicide", that concept for dawning consciousness of the politics of differential reproduction. The species had reason to stand upright at last, even if not too efficiently at the start. Man was on the long lonesome road. And women's place in this revolution is where it was imagined cross-racially in a fair section of U.S. 1960s politics -- prone. As Lovejoy put it, women did not "lose" estrus; they constantly display its signs. For the new strategy to succeed, "the female must remain constantly attractive to the male... . While the mystery of bipedality has not been completely solved, the motive is becoming apparent." (Lovejoy 1984, p. 28). Small wonder that Lovejoy cites his brother-colleague for evidence that "[human] females are continually sexually receptive." (Lovejoy 1981, p. 346; footnoted on p. 350, fn 79, "D.C. Johanson, personal communication.").

Why did serious scientists need to respond to this story? Hrdy and Zihlman were involved with their own research and publication, attempting to establish the authority of stories quite different from Lovejoy's, some of them involving Lucy. It took time to write about Lovejoy, just as it took space in this essay, and Lovejoy has not taken the time to write in detail about the interpretations of Hrdy or Zihlman. His decision not to cite Zihlman's substantial and directly pertinent technical analyses, in a paper replete with references, effectively obscured from the readers of the 1981 *Science* cover story her significant work on bipedalism, sexual dimorphism, and reconstructions of hominid social and reproductive behavior at the



crucial boundary. (Lovejoy 1981; for summary and previous references, see Zihlman 1983 and Laporte and Zihlman 1983). The cover article is the point: Lovejoy's story and his involvement with immensely important fossils cannot be ignored. Milton's daughters do not have that luxury. But they do have a weapon more potent than the undecidably lost or omni-present signs of estrus. They type.

Zihlman responded with Jerrold Lowenstein in a parodic, serious interview with a freeze-thawed, living Australopithecus female fossil: "A Few Words with Ruby." (Zihlman and Lowenstein 1983). Ruby got her name from the Ruby Tuesday of the Rolling Stones. Interviewed in the British Museum, she discussed the social-reproductive lives of her group, as well as her relationship with her discoverers' scientific friend, Dr. Aaron Killjoy. "Ruby sighed, 'One thing hasn't changed in three million years. Males still think sex explains everything,'" (Zihlman and Lowenstein 1983, p. 83). Ruby was slated for a busy schedule under the patronage of science, including a BBC documentary called "Ruby, Woman of the Pliocene." But she took time to describe her life in terms reminiscent of a contemporary species, Pan paniscus, the pygmy chimpanzee, Zihlman's favored model species for studying origins. The essentials of Ruby's account include active, mobile hominid females, even when carrying babies, food sharing patterns emerging from matrifocal social organization and selection for more socialable males within that context, and open and flexible social groups. Food played a larger role than sex.

But aside from the specifics, there is a formal difference in the Zihlman story, both in the interview with Ruby and elsewhere. (Zihlman 1983, Laporte and Zihlman 1983). There is no origin of the family. There is no chasm, no expulsion from the garden, no dramatic boundary crossing. The Miocene/Pliocene boundary is depicted as less hostile, more as an opening of possibility for which paniscus-like hominoids were ready, socially and physically. There is no narrative of a time of innocence in a forest, followed by a time of trial on the dry plain, calling out the heroics of reproductive politics. The basic narratives of causality depend less on the antagonistic dialectic of nature/culture, the dramatic stories of the west and its others. In the western sense, there is simply less drama. Zihlman's stories regularly do not generate "others" as raw material for crucial transitions to higher stages. This is not a result of "moral superiority" or "genius"; it is an historical possibility made available by political-scientific struggle to generate coherent accounts of connection. One object of knowledge that falls away in these accounts is "the family". In a sense there is nothing to explain, no primal scene, whose tragic consequences escalate into history, no civilization and its discontents, no cascading repressions. No wonder the reproductive politics look different.

These basic narrative strategies constrain Zihlman's accounts of both physical and social parameters of human evolution. They are iconically represented in her Human Evolution Coloring Book illustration of Lucy and her relatives, the pygmy chimp and "man". (Zihlman 1982, IV, no. 5). "Man" here is a female, a visual jolt in the illustration, even allowing Lucy's probable sex. The outline of a tall human figure contains a twinned ape, one half of whom is a pygmy chimp female, the other half, joined at the midline, is a

reconstruction of Lucy. The three figures share several body boundaries, while differentiated in degrees of bipedal specialization and other particulars that mark the boundary between hominoid and hominid. There is a play of similarity and difference among the two genera of hominids, Homo and Australopithecus, and the chimpanzee species, paniscus. They model each other in an invitation to the student to color their common space. Boundaries exist in Zihlman's accounts, but they suggest zones of transition rather than the inversions of dualist stories.

In collaboration with a science writer, Hrdy responded to Lovejoy with a popular piece called "What Did Lucy's Husband Stand For?" (Hrdy and Bennett 1981). This piece and her review of Donald Symons' sociobiological The Evolution of Human Sexuality, "The Latest Word and the Last," contain the kernal of Hrdy's explanatory strategy and her view of the centrality of reproductive politics in the human place in nature. (Hrdy 1979). Like Zihlman, Hrdy must reconstruct what requires explanation, and the chief casualty is "the family". Also like Zihlman, her strategy of parody of Lovejoy's expulsion from the Garden account, complete with its Eve fated to ever more efficient production of babies in conditions of scarcity, is coupled with detailed renegotiation of narratives of sexual politics. But unlike Zihlman, Hrdy sees the nub of what it means to be human in the question of sex. Lovejoy's monogamous nuclear family with male provider and faithful-but-ever-attractive female baby machine is dispatched by comparison of human patterns of sexual dimorphism with other primate patterns in relation to breeding systems and ecological niche; by discussion of female subsistence activity among human gatherer-hunters; by considering ecological explanations based on female feeding possibilities and needs; and by rational genetic investment assessments for a male contemplating monogamy among early hominids. It looks like a bad bet. Hrdy also dispatches the problem of bipedalism, clearing the ground for the important question of active female sexuality. She approves Peter Rodman's explanation that hominoid ancestors were not very efficient quadrupeds, so a transition to inefficient bipedalism was not much of a loss. The most convincing explanations seem to work by unravelling the object of attention.

The politics of the female orgasm is what requires elucidation in Hrdy's narrative logic, not from some errant prurient interest or special pleading for females, but in the interests of rational mind and equal potential for citizenship in the late capitalist primate polis ruled by the logic of the market. (Hrdy 1979). For Symons, the human female orgasm is a by-product of the more perfect and sensible male version so essential to the tale of reproductive maximization strategies in the face of limited resources called females. But Hrdy argues that women evolved too; i.e., there is large variation in female fitness, and so grounds for selection. Female reproductive fitness can vary in at least 5 categories: female mate choice, female elucidation of male support or protection, competition with other females for resources, cooperation with other females, and female ergonomic efficiency. The politics of the female orgasm is in the center of the matter. It is part of an active, investing, and calculating female sexuality, where sex is of the essence of mind. Those two categories collapse in sociobiological accounts. Hrdy sees active female sexuality as a tool to manipulate and deceive males, not

to enhance a chimeric marriage bond, but to induce male aid, willing or not, in her reproductive process. Concealed ovulation, orgasm, active solicitation when conception is impossible: all these are rational behaviors of an investor in certain market conditions that pertained at the time of origins.

Property in the self has been the ground of citizenship in the west since the 17th century at least. The tenuousness of such a form of property for reproducing females has made citizenship anomalous or simply impossible for real women. Abortion and other reproductive rights politics today should lay to rest any complacency that the issues are past. Hrdy is arguing a biological form of the struggle for rational citizenship within the constraints of the narrative logic of scarcity and agonistic difference, i.e., within the traditional bounds of western stories. Nineteenth century feminists appropriated the available medical doctrines of the female animal, the creature organized around the uterus, the scene of fruitful production, of nurturing, and argued the rationality of female citizenship in the form of social motherhood, extending the uterine power of the hearth to the sterile masculine public world. Sociobiological feminists carry out a parallel task with 20th century coded bodies and their investment portfolios. Female primates got orgasms in the 1970s because they needed them for a larger political struggle. The active pursuit of pleasure and profit is the mark of rational man, the practice of civic virtue in the state of nature. Woman could do no less. Female sex took on the promising dual property, simultaneously natural and active, that is so potent in western stories.

So primatology is politics by other means. In myriad mundane ways, primatology is a practice for the negotiation of the possibility of community, of a public world, of rational action. It is the negotiation of the time of origins, the origin of the family, the boundary between self and other, hominid and hominoid, human and animal. Primatology is about the principle of action, mutability, change, energy, about the possibility and constraints of politics. The reading of Lucy's bones is about all those things. In other times and places, people might have cast Lucy's bones in the rituals of necromancy for purposes western observers called "magical". But western people cast her bones into "scientific" patterns for insight into a human future made problematic by the very material working-out of the western stories of apocalypse and transcendence. The past, the animal, the female, nature: these are the contested zones in the allochronic discourse of primatology.

#### Notes

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Rowell, Robert Seyfarth, Joan Silk, Barbara Smuts, Thomas Struhsaker, Shirley Strum, Jane Teas, Sherwood Washburn, Patricia Whitten, Richard Wrangham, and Adrienne Zihlman.

<sup>2</sup>I am not considering here the central strand of Japanese and Indian primatology. Similarities and differences should be read in the context of specific founding myths and late industrial social relations. A comprehensive comparative study has been undertaken by Pamela Asquith of Calgary University. (Asquith 1984). The emergence of "Third World" primatologies, intimately connected to the political and economic role of "vermin" and "wildlife", is another unexamined topic.

<sup>3</sup>Readers older than 15 will also recall a host of earlier entries into the fray, like Naked Ape and The Imperial Animal. (Morris 1967, Tiger and Fox 1971). Many of these books are now written by women scientists, whereas none of them were before the post World War II period in primatology. Jane Goodall's In the Shadow of Man (sic, 1971) is a landmark in ape gender politics. I doubt that Goodall intended the irony I hear in that title, but her book may be read fruitfully as a chapter in the "reproduction of primate mothering". (Chodorow 1978).

<sup>4</sup>Jameson takes seriously Levi-Strauss's suggestion that "all cultural artifacts are to be read as symbolic resolutions of real political and social contradictions." (Jameson 1981, p. 80). Jameson also points out that this proposition requires serious "experimental verification." However, Jameson's notions of a symbolic unconscious and his description of three phases of analysis, especially his focus on the symbolic act and the ideologeme ("the smallest intelligible unit of the essentially antagonistic collective discourses of social classes" p. 76), are rich for a reading of primatology. It is essential to reconstruct the notion of social classes to problematize the collectivities "women" and "men".

<sup>5</sup>At least the hominids got rid of estrus, although this modest reform has caused a great deal of scientific turmoil, producing some of the most bizarre contributions to the primate literature. For a serious and amusing summary, see Hrdy 1983.

<sup>6</sup>A clear origin story privileging strategic reasoning is de Waal's (1982) Chimpanzee Politics. Langdon Winner (1980 and 1983) argues that artifacts have politics and discusses the consequences of the reduction of public reasoning, i.e., politics, to questions of cost/benefit strategy. That strategy is only one way of resolving difference. My modest amendment to his argument is to note that animals have politics articulated in models of mind written into their pliant heads and genes. (Haraway 1979 and 1981-2). The classic text is Dawkins (1976).

<sup>7</sup>Everybody knows orgasms are highly political; that's why female monkeys had to have them in the last few years. It took some ingenuity to engineer them in the lab, but now observations are properly relicable in field and lab. (Burton 1971, Chevalier-Skolnikoff, 1974). Sarah Blaffer Hrdy bases The Woman That Never Evolved (1981, written partly in response to Symons 1979) at least as

much on Mary Jane Sherfy (1973) as on Darwin. Sherfy has more page references in Hrdy's index than E.O. Wilson (1975). Hrdy is a much better political theorist than Wilson.

<sup>8</sup>In general the field staffs of permanent field research sites do not show up in professional rosters; this fact results in making the production of field primatology appear a more white affair than it is. As skilled staff are increasingly nationals of the countries where non-human primates live, this is misleading, but written primatology outside the reports of national parks and internal documents from the research sites is overwhelmingly authored by people like the professionals on these primatological society lists. The lists are also biased toward doctorate scientists. But for signs of change, see Goodall et al. (1979) and Baranga (1978).

<sup>9</sup>Beginning in 1929, but with almost all entries since 1965, I have counted about 65 married couples publishing together in primatology, including a cursory count of laboratory psychologists and a more careful count of field workers. My count misses most couples outside England and the U.S. This figure is a significant proportion of all active primatologists.

<sup>10</sup>It is arguable that the highest status science is coded as requiring the greatest empathic and intuitive capacities, exhibited in a special way by the representatives of the gender man, not woman. Kekule's dream of the benzene ring is an example; whole parts of the chemical industry rest on that night. Einstein, Polanyi, Chargaff, Faraday, other physical scientists, especially those located in theoretical physics and mathematics, are ascribed special abilities to intuit the world. Ascription of Genius does not rest on the ideology of objectivity alone, or even principally. However, not surprisingly, the same sciences are coded as exacting the greatest powers of rational discrimination and "objectivity". Gender coding is necessarily contradictory, or it could not be the powerful operator that it clearly is. Everyone would slip through the net, and unfortunately none of us does, although we do successfully degender parts of ourselves from time to time. It's a bit risky, even for the privileged. Nuanced and contrasting consideration of these issues from feminist points of view is found in Traweek (1982) and Keller (1983 and 1985).

<sup>11</sup>Even Tarzan learned to read; he is in fact one in a long line of autodidacts, the issue of bibliogenesis. Progeny also include Frankenstein's monster, Tarzan's author Edgar Rice Burroughs, and Frankenstein's author Mary Shelley. National Geographic films of Jane Goodall show her alone deep into the night transcribing her field notes; the day is recording, the night is transcribing. The filmic text is about the hope of touching nature and being accepted. The films hardly hint at Gombe's elaborate history of record keeping, involving dozens of workers from many countries over 25 years, with the aid of major universities (such as Stanford, the University of Dar Es Salaam, and Cambridge), and the assistance of capacious computers, tape recorders, and other paraphernalia of modern science writing.

<sup>12</sup>Barbara Smuts, Richard Wrangham, Dorothy Cheney, Robert Seyfarth, Thomas Strusaker interviews. (Cheney et al. in preparation). In

general, the UCB women are in quite different networks than the Stanford-Harvard-Cambridge webs. Partly, the difference is the cleavage between zoological-ethological and anthropological frames. Those who cross the cleavage are particularly interesting, but in general the traffic on the bridge making the crossing is mostly in the direction of adopting the sociobiological-socioecological strategies. From another point of view, the webs among younger workers, I think especially the women, simply do not follow the cleavages set up by the famous controversies.

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