

# The Ellul Forum

for the Critique of Technological Civilization

July 1995 Issue #15 ©1995 Department of Religious Studies University of South Florida, Tampa, FL 33620

## Women and Technology

### About This Issue

The main theme of this issue is Women and Technology. My apologies for the lateness of this issue. Because of health problems, the author of our theme article for this issue, Susan Kray, from the Department of Communication at Indiana State University, was unable to provide the essay for publication in July of 1995. Consequently this July issue is finally being released along with our January 1996 issue. I wish thank Dr. Kray for her perseverance and our subscribers for their patience. Her essay on "Women and Technology: A(nother) Crisis of Representation" is iconoclastic and thought-provoking. I think you will find that this issue was worth waiting for.

In addition to our theme essay, we have another Forum essay, contributed by Daryl J. Wennemann, from the University of Scranton, on Ellul's use of the term "Technique". Dr. Wennemann draws on the work of Rudolf Otto to argue persuasively that for Ellul, "Technique," like "the sacred," is not a concept but an "ideogram." Finally, you will find in our book review section, reviews of two recent books that deal with women and technology.

Darrell J. Fasching, Editor

### The Coming of *The Coming of the Millennium*

Darrell Fasching's new book, *The Coming of the Millennium: Good News for the Whole Human Race* will be published by Trinity Press International this spring. The book dedication reads: "In memory of Jacques Ellul, 1912 - 1994, who taught me to understand that "evangelical theology" means good news for the whole human race." The book is an ethical critique of the tradition of evangelism of the passing millennium which focused on "conquering the world for Christ" -- and was prone to violence, especially through the abuse of apocalyptic thought by figures such as Hal Lindsey. It argues that Ellul's understanding of the gospel as a message of universal salvation provides a non-violent alternative for the coming millennium -- one in which evangelism is the proclamation of the good news of God's hospitality to the whole human race. It is a message for a new millennium of pluralistic global interdependence in a technological civilization. The book is scheduled for release in April of 1996.

### In This Issue

*Forum: Women and Technology*  
*Women and Technology: A(nother) Crisis of Representation*  
by Susan Kray p. 2

*Forum: Ellul's Use of "Technique"*  
*The Symbolic Function of "Technique" as Ideogram in Ellul's Thought*  
by Daryl J. Wennemann p. 10

*Book Reviews*  
*Gender on the Line*  
by Lana Rakow.  
Reviewed by  
Jonathan Stern p. 14

*Feminism Confronts Technology* by Judy Wajcman  
Reviewed by  
Jacqueline Ciaccio p. 15

*About the Ellul Forum* p. 16  
History  
Manuscript Submissions  
Subscriptions  
Bibliographic Reviews  
Book Reviews

## Forum: Women and Technology

### Women and Technology: A(nother) Crisis of Representation

by Susan Kray

Department of Communication, Indiana State University

A major debate in America over the last several decades has centered on how different women really are or should be from men (MacKinnon 1987; Tavis 1992), particularly with regard to work. The debate, by its very existence, implicitly defines men as the norm and women as deviant. We ask what protections, restrictions, or special training should or should not apply to women, the different ones. We do not commonly ponder how men deviate from a normative female standard and then ask what protections, restrictions, or special training should apply to men.

It is interesting that feminists generally build on precisely this framework. Many make feminism the politics of difference—from men. Their inquiries are suffused with a politics of identity, as, indeed, are men's studies of the relationship between men and technology (Wylie 1991:21). Many feminists, seeking to understand women's nature, as distinguished from men's, focus on women's supposed commitment to nurturing and to the organic world, as distinguished from men's supposed commitment to power and technology. Many people, in whichever camp, see men as "task-oriented," while women are "people-oriented." Others deny that women are really different in any innate way—not that men are really different. Some contend that women are innately different, but that this difference is all to the good; we are good deviants, so to speak.

One result is that, as Carol Tavis (1992:57-92) points out, Carol Gilligan's (1982) work on differences in the moral reasoning of men and women has found a home with two very different groups in the struggle over the workplace. Those wanting to limit women's opportunities take Gilligan's research as proof that women care more about people's feelings than about getting a job done. On the other hand, many women, feminist and otherwise, take Gilligan's work as proof that women are morally superior to men, one implication being that women are more fit for work that affects people. Interestingly, we may add that Gilligan herself stands squarely in the traditional masculine-oriented framework that sets men as a standard. In calling her book *In A Different Voice*, she did not mean that men were different. The "different" voice for which she argues belongs to women.

Clearly, people disagree on what the differences are between women and men with respect to technology, but difference apparently we must have. The differences, moreover, must be hierarchical. Writing about science and technology, Haraway (1991:80) observes that "...the creation of difference...plagues 'Western' knowledge; it is the patriarchal voice in the production of discourse that can name only by subordinating within legitimate lineages." Again, women are the ones who are different. Again, technology and work are a primary locus of difference. So is science.

Feminist theorists have pointed out that in Western cultures, male scientists and technologists have identified women and femaleness with Nature, as opposed to the masculinity of culture, technology,

and science. Natural philosophers and scientists have represented the male mind as a masculine force "penetrating" Nature's (female) secrets. On the other hand, authors of Western novels and producers of Western movies have typically represented the American frontier as a place where the male hero is close to nature, to savagery, and to simple technologies, while (white) women represent civilization (Fiedler 1982/1966). Men's work is having adventures in the wilderness; women's work is maintaining the routines that support civilization. One might fairly conclude that difference, not its details, is the name of the game.

#### How It All Started--Maybe

When feminists talk about technology, they often conform in astonishing degree to the traditional views of popular culture, social science, and Bible-oriented religions (see Genesis 4:21,22). All of these have claimed at one time or another that culture began when men started using their male intellects to work difficult substances—wood, stone, bone, and metal—into great inventions. Recalcitrant materials constitute an important part of the story, underlying as they do a key part of the myth, namely the determination and inventiveness of Man that made culture possible. Man is a tool-making, weapon-throwing, task-oriented, problem-solving, technologically active creature. Men are the human race's chief designers, makers, distributors, and users of tools.

It is a commonplace observation that in fact women provide the emotional and household environment in which men can make all that happen. Women are also responsible for providing counterbalances and supplements. To rationality, they have a duty to oppose tenderness and intuition. To balance men's commercial and professional orientations, women have a duty to sustain domesticity.

A surprising number of women, including many feminists, agree with an equally surprising number of men that men are by nature (or by inevitable result of their early socialization) in charge of destructive technologies and of going forth into the world to build, destroy, kill, invade, enslave, and run impersonal, cruel bureaucracies undergirded by an unfeeling obsession with men's own rational processes. Women are by nature (or by inevitable result of their apparently universal socialization as child-care workers) in charge of staying home doing the low-tech work that sustains life, intimacy, honesty, and households. Men's roles as killers and bureaucrats do vetail nicely with their seemingly greater technological aptitude. Women's task of generating human warmth dovetails nicely with their supposed refusal to be fascinated by technology.

This view of male and female human nature is summarized, with remarkable fidelity to many scholarly accounts, in the movie *2001: A Space Odyssey* (directed by Stanley Kubrick in 1968). In the opening sequence, aptly titled "The Dawn of Man," a population of

males invents the first weapon. Wielding a leg bone from an animal skeleton and vocalizing enthusiastically, they discover how to kill a tapir, portrayed as an innocuous, good-natured, non-vocal herbivore. Next, they bludgeon other anthropoids. Then they evolve into ill-tempered, vocal, male carnivores. At the end of the sequence, one of their furry, male descendants commits the first murder. Then, executing a clumsy dance of anthropoid triumph, he throws into the air the murder weapon, a bone that mutates on screen into an orbiting space station.

Progress is the ape-man's ultimate product, once he gets his weapon-using, meat-eating, neighbor-murdering start. Aggression, hunting, technology, vocalizing, space-bound science, work, and war are thus woven into one masculine narrative.

Where is Woman while Man is evolving? In the "Dawn of Man" sequence of *2001: A Space Odyssey*, we glimpse females only once, lying silent (and non-vocal, like the tapirs) on their backs inside a cave cuddling their young. Progress is not their most important product. They are, in fact, plausible progenitors for the woman in the second sequence, in the orbiting space station. Uniformed and silent, she serves lunch to a traveling man.

Man the Hunter, so dramatically portrayed in "The Dawn of Man," was a scholars' invention (Haraway 1991:86). As such, it met the need of physical anthropologists to explain why early hominid remains were found with small brain cases and no tools amidst piles of cracked animal bones (Willoughby 1991). How could such beings give rise to us, a technological species? To save the evolutionary narrative and the received wisdom that Man is best defined as the tool-using animal par excellence, the technological animal, Raymond Dart postulated that hunting was a uniquely social activity that launched our apparently dullard, undersized, non-technological hominid ancestors on the evolutionary path that led to the invention of technology, speech, and the development of human intellect.

C.K. Brain (1981) later determined that carnivores, not hominids, had broken these bones, but Man the Hunter had already launched an apparently immortal career. He is still assumed as a factor in many accounts of human nature. The maleness of the Hunter slipped into the narrative as an unexamined, and logically unnecessary, assumption, but logical or not, it has remained ever since, in both scholarly and popular versions. It is consistent, after all, with our cultural expectations. Man the Hunter has therefore had both academic and popular advocates.

"The 'man the hunter' hypothesis of the 1960s" was, according to Haraway (1991:86), the "best known product of practice in the [anthropologist Sherwood] Washburn [academic] patriline." This hypothesis, "pre-eminently about male ways of life as the motors of the human past and future, was grounded in psychiatry, primatology, and ethnographies of 'modern hunter-gatherers'" (1991:90).

Meanwhile, Robert Ardrey's *African Genesis* (1963), based on the same model, was setting the tone for popular understanding of human origins (Willoughby 1991:284) in the killer hominid household and its hunting-camp technology. Ardrey is explicit and emphatic: his version of our "original nature" and "our ancestral killer ape" define the future of the human race. Humans did not invent weapons; rather, we inherited them from our ape ancestors in a process that shaped human evolution for all time. The weapon "had fathered man" (1963:29) in the primal, manly process of death-dealing that constrains us and all our posterity. Notice that tools are implicitly defined as weapons of attack and the weapon is gendered, as are the process (fathering) and its human product (man). And since "No child of ours, born in the middle twentieth century, can differ at birth in significant measure from the earliest of *Homo sapiens*" (1963:12), therefore, we can never truly transcend that early, violent start. Hence, "The problem of man's original nature imposes itself on any human solution" (1963:13).

In Haraway's words (1991:39), "The past sets the rules for possible futures in the...sense of showing us a biology created in conditions supposedly favouring aggressive male roles [and] female dependence." Even among people who are not sure the human species

evolved from a predecessor species, Ardrey's scenario of Man the born killer has become naturalized as inescapable evidence about the real nature of human nature.

The story was modified in 1976, when anthropologists Tanner and Zihlman added prehistoric female gathering to prehistoric male hunting, giving the technological human race mothers as well as fathers. They saw women's as well as men's technology as a primary engine of human evolution, attributing "the transition from a primate ancestry to the emergent human species" to "connections among savanna living, technology, diet, social organization, and selective processes" (1976:586). Speaking of food production and the change from hunter-gatherer modes to farming, Bolen (1991:403a) claims that

Engendering prehistory creates gendered social interaction which provides a strong basis for [understanding] cultural transformation [and] leads to arguments that women and their activities create or define the Neolithic.

Constructing alternative scenarios and reasoning from ethnographic and primatological work (some of the latter showing that females are heavier consumers of meat and insects than are males [Zihlman 1991:6-7]), anthropologists have largely abandoned the Man-as-Hunter model of human origins, but the hairy, hoary old Hunter with his killing technology still lurks in popular culture. For example, the Men's Movement attempts to ground modern men's self-respect and spiritual fulfillment in an innate, ineradicable male identification with hunting, wilderness, aggressiveness, and technologies of death. With little argument or explanation, Man the Hunter becomes Man the Warrior. One recent Men's Movement event (Indianapolis, October 1995) teaches men how to be men through "The New Warrior Training Adventure." Civil War reenactments supported by masses of equipment available through specialized catalogs continue to be popular in the South and elsewhere.

The corollary to nearly every manifestation of Man the Hunter/Man the Warrior, whether scholarly or popular, is that women constitute a non-hunter, non-warrior support team. Both traditional and feminist thinkers seem committed to playing down the capacity of women to fight and kill. Prehistoric Woman hangs around base camp tending tots and cooking food in clay pots. Contemporary women are invited, along with children, to witness the New Warrior Graduation Celebration at a midwestern church. A skilled horsewoman and writer on Civil War topics is denied participation in an Alabama reenactment of the War between the States (Wise, personal communication, 1993), because "no women fought in that war," despite clear evidence that women did fight in that war. Women and girls of the Italian resistance in World War II were

...successful precisely because girls were under less suspicion...it wasn't regarded as probable or possible that a woman could shoot... Naturally the Germans didn't think that a woman could have carried a bomb, so this became the women's task....But in many instances women were not given arms because men believed that they were more emotional and less capable of making decisions (Saywell, 1986:82).

Advocates of Man the Hunter fail to describe women as descendants of killer apes who therefore possess a primal need to kill. One would be hard put to find Warrior Woman Weekends or even egalitarian we-were-all-primal-killer events both for men and women. Women, it seems, fail to find spiritual fulfillment by getting out there in the woods to get in touch with their hunter or warrior past. They are not descendants of their fathers or the ape-weapon that fathered them.

Feminist theorists have pointed out that cultures tend to treat the women's side of things in terms of "lack" or absence. Where women and men differ, one asks what is missing in the women. Feminist scholars themselves have inadvertently followed this same habit of asking what women lack. Faced with the need to rewrite a biased male narrative about the relationship of the human species to its technologies, feminists have, by and large, not written women into the scenarios of killing and weaponry, but have rather omitted killing and weaponry in descriptions of women's lives and to downplay women's

contributions to complex technologies. Aggression and the killer instinct are treated as missing in women. Feminists have also tended to follow the traditional conflation of tools with weaponry. If women do not fight and kill, they do not use complex technologies, either.

Although Tanner and Zihlman and others (see Dahlberg, 1981) challenge the notion of Man the Hunter and offer a counterbalancing view of prehistoric Woman as a Forager, they draw few conclusions about implications for modern life, other than the familiar notion of women feeding their families. For all the emphasis on the aggression-ridden consequences of Man's Hunter/Warrior origins, the image of Woman the Forager is innocent of any such associations. Nothing she did is invoked to explain any of humankind's viler practices. Even though humanity's main activity has been getting food (Dahlberg 1981) and even though women are thought to have provided some eighty per cent, perhaps, of that food, their methods and tools have no bearing on anything objectionable in human life today.

One does not, for example, invoke the image of Woman the Forager to explain human communities' habit of overrunning other communities' habitations and collecting their worldly goods. One does not hear suggestions that Woman, the ancestral Forager, could ultimately be behind the current Serb expropriation of Bosnian Muslim property or, fifty years ago, in the wake of Nazi deportations, Gentiles' appropriations of the homes and property of their abducted Jewish neighbors. Women have, indeed, participated directly in slaughter and plunder throughout history (a recent example is the Rwandan massacres), but this kind of hands-on work experience is seldom inscribed in Woman the Forager's resume. For feminists, as for traditional male thinkers, when it comes to evil-doing, we are, it seems, the descendants of our fathers only and not of our mothers.

Whether Ardrey's chain of events, in which the "weapon fathered Man," ever occurred may well be irrelevant. Biologists, after all, insist on the plasticity of human nature. One would infer that even if we were descended from genocidal maniacs, we might theoretically craft gentle communities whose worst adversarial tactics might stop, say, at name-calling. However, if we are not genetically constrained by hunter, killer-ape origins, we are certainly limited by popular beliefs about our origins.

These beliefs entail important political consequences. To pick but one example: How can one expect American men to turn in their guns when every man in the country is descended from killer apes and has a primal, ineradicable drive to hunt? We might argue, therefore, that scholars would do better to critique these myths than to promulgate them. As Whelan (1991:358) points out,

It is important to problematize the origins of gender systems [because of] the ideological power that reconstructions of the past have for the present (Haraway 1986; Fedigan 1986). The popular reduction of "gender" to a universal division of labor where men hunt and women gather and give birth has tremendous ideological power in the present. Reconstructing the gender of our distant hominid ancestors so that it mirrors current gender roles and relations is a means of justifying present social and economic conditions.

Yet, entire areas of relevant scholarship, including archaeology, the "science of technology" (Leone 1973:125-150), are, as of 1995, still mired in confusion about male and female human nature. For many scholars, as for artists and for popular culture, man's weapon-ridden past and its modern technological results define who humans are in the universe, not only as products of evolution but as spiritual beings in a cosmos with meaning.

As Noble (1993) describes the development of these ideas, Western philosophical and clerical (church) culture gave rise to a notion of the transcendent male intellectual enterprise. This notion was directly inherited by Western science and then adapted for technological enterprises. For example, space-era mythology is entranced with rockets and space stations, developed first by the Nazi war-machine, then, after the World War II, by its personnel imported to USSR and America. Aerospace mythology, Noble correctly points out, repeatedly praises "man's vision" and "his indomitable human spirit," using

a vocabulary of transcendence to describe the almost entirely male province of aerospace technology.

Moreover, we may note, men's favorite widgets tend to have moving parts. Bows and arrows, pulleys, wheels, cranks, potters' wheels, looms, sports cars, atom bombs, and hypertext give rise to physics lessons and philosophy. These disciplines are among the most "transcendent" of Western Man's self-defining enterprises and both, by the way, remain largely male preserves. Women, on the other hand, seem everywhere and at all times to work with the simpler technologies and more malleable materials. If men's technology transcends the human condition, women's undergirds it. Women's technologies do not define a transcendent human spirit in the universe. At most they define women in work places, especially the home.

## Women and Public and Private Space

The contrast between indoors and outdoors or between private space and public space seems to be an inextricable part of the theoretical package. While men's inventions enlivened the march of centuries, guess who lurked in caves, tents, and houses, rendering support services? Women, house bound in their private spaces, do not hammer resistant materials into great inventions. Instead, they have whiled away the millennia indoors, cooking, cleaning, spinning, and cradle-rocking, repetitively hand-processing "materials that are soft and pliable" (Rice 1991:436), such as food, textiles, and hand-worked clay vessels. Anthropologists, until recently, and archeologists even today, have thought along the same lines as the historians whom Berenice Carroll (1976:xi) critiqued nearly two decades ago. For many scholars, it seems, women live in the conceptual Land That Time Forgot.

[Most women throughout history]...are conceived to have lived out their lives in a limited number of stereotypic roles, essentially changeless over time and therefore irrelevant to the "intellectually interesting" questions of historical change.

Certainly, some feminist scholars have challenged the myths that seem to place women under eternal, universal house arrest in "private space." As Conkey and Spector point out (1984:3),

...feminist anthropology quickly came to question the assumption of a distinct 'private' or domestic sphere, which informed much early research (i.e. as that which had been left out of account by an androcentric focus on the public domain). In a compelling auto-critique, Rosaldo (1980) shows how a sharp distinction of public from private embodies the highly artificial, and local, precepts of 19th century Victorian patriarchal culture."

In fact, if spaces supposed to be domestic, private, and female have any boundaries at all, these often turn out to be vague and permeable. Hauptman (pers. comm. 1992), referring to the rural, extended households of Babylonia and Israel described in the Talmud, points out that there was no such thing as purely "private" space; the homestead was "permeable", with crafts people, peddlers, travelers, servants, friends, and family members continually coming and going. The same might be said of the self-sufficient households of the ante-bellum American South (Fox-Genovese, 1988).

The spaces of modern life, on the other hand, tend to increasing privatization and commercialization for both women and men. In another context, Ellul (1964:321) implicitly attacked the dichotomy between male public space and female private space when he observed that technical civilization encapsulates "man" in tiny, private, unhealthy cells removed from nature. "Man" is imprisoned in "a twelve-by-twelve closet opening out on an anonymous world of city streets." This is a very different picture from the traditional differentiation of "public" man from "private" woman. Indeed, the thirty years since Ellul made that observation have seen men crowded out of the public sphere by the very factors he identified in 1964: "labor... [that] stretch[es the worker] to the limit of his resistance, like a steel cable which may break at any moment" (1964:320). Such work leaves a man little energy, volition, or time for public life. Women, in turn, have

been pushed by economic necessity out of the home into the same realm of wage-earning work that both encapsulates men and stretches them to their limits.

Many middle-class women who once had the luxury of staying home to care for their families, if they chose, have now had to join the wage-earning work force, just as many working-class women always have had to do, like it or not. However, working among strangers outside the home does not make women public beings. As with men, that work enforces the very conditions that deprive women of opportunity to participate in public life.

Instead, women, it is now said, carry a double burden—some might call it triple—of housework, dependent care, and wage-earning work. Wives have more work hours and fewer leisure hours than do husbands. Women are also said to earn about seventy cents for every dollar that men make. To put that another way, we might say that women have to work longer and harder than men, often with more rudimentary technologies, to earn the same pay—and fewer toys.

Moreover, with the "downsizing" of work forces, fewer women are doing more of the work. A recent news segment claims that wage-earning women, because they are overworked in their jobs, are bearing an increasing number of premature babies. One poignant result is that pediatric nurses work such long, strenuous shifts taking care of other women's newborns that their own pregnancies, increasingly, terminate early under the stress. Meanwhile, in the words of spokesmen of a non-profit public-policy organization called "Redefining Progress,"

...a monetized service sector takes [the] place [of declining families and communities]...Parenting becomes child care, visits on the porch become psychiatry and VCRs, the watchful eyes of neighbors become alarm systems and police officers, the kitchen table becomes MacDonaldis...(Cobb, Halstead, and Rowe, 1995:67).

They might add that women's unpaid work in personal relationships with children and other family members, as it is monetized, is perforce technologized, as cost-effective solutions substitute for the costly presence of adult women in the home. A certain amount of child care, even, is accomplished by machinery (notably television, computers, and electronic games) that fixes children's attention on itself and keeps them relatively immobilized. A similar observation might be made of "elder care." Every place becomes the work place; no place is truly "public" and private life shrinks to almost nothing.

With women as well as men under so many pressures to vacate both the private and the public spheres, they are pushed into the interstices of their own lives at work and at home. The public arena, now professionalized and filtered through technological media, resounds with complaints about the "breakdown of the family" on the one hand and the breakdown of work life on the other, as jobs are consolidated or exported, but the paid professionals in charge of public life rarely link the two breakdowns. Surely women spend less time in their unpaid workplaces at home precisely because they are shouldering larger burdens in paid workplaces. And through it all, the scholarly myth of private, female, nurturing, low-tech space still underlies much of scholarly thinking about gender and technology.

What is even more amazing is that there are very few critiques of the myths prevalent in the "science of technology," archaeology, that science in which are rooted many of our self-concepts as a species. What one does find is a body of generalized feminist critiques of archaeological practice.

### Women and The "Science of Technology"

Archeology, as we have seen, has been aptly termed "the science of technology" (Leone 1973). Archaeology, more than any other traditional branch of social science inquiry, is compelled, by the nature of its evidence, to focus largely on technology. It "uses material culture as its data" (Bolen 1991:403a). Objects that survive the millennia and come into the hands of archaeologists are almost always made of durable substances, such as stone, clay, or bronze. Specific technolo-

gies, involving stone tools, and later metal, were required to work them into artifacts. Many early tools and utensils, themselves made of the hardest available materials, have survived to be looked at, x-rayed, and tested for residues of flesh, food, and fiber. Examples include arrow heads, mortars and pestles, metates (grinding stones—the "Stone Age Cuisinart," in Rice's [1991] formulation), olive presses, fired pottery, loom weights, and kilns.

The catch, and the open secret that few talk about, is that nobody has direct evidence as to who made ancient tools or weapons, or used or distributed them. Prehistoric tools do not come marked with demographic data about these people. Nobody knows their gender, age, health, or other demographic parameters.

However, despite the ambiguity of the evidence and despite the evolution of feminist perspectives in a number of scholarly disciplines, archaeologists still attempt to root the whole system of gender-allocated technologies in the same supposedly immutable core of human nature that popular culture affirms. The archaeological literature has barely begun to problematize gender (Conkey and Spector 1984; Walde and Willows 1991; Gero and Conkey 1991, Brown 1993). It is quite common for archaeologists to assume that early humanity divided technological work the same way popular culture says we do. Where the evidence is missing, feminist analysis has shown, archaeologists often fill in the blanks by drawing on our common cultural imagination.

Archaeologists, by working with these traditional concepts, legitimize them. When these concepts then filter back into popular culture, they arrive emblazoned with scientific credentials. That is, intentionally or not, archaeology and the related disciplines have "substantiated a set of culture-specific beliefs about the meaning of masculine and feminine, about the capabilities of men and women, about their power relations, and about their appropriate roles in society" (Conkey and Spector 1984:1).

Archaeology, the discipline entrusted with explicating the ancient past, has resisted, probably more than any other social science, meeting the feminist challenge. As a discipline, it offers an object lesson to any who think feminist theory has a manifest destiny to permeate all the social sciences and humanities.

It is interesting to trace the precise mechanisms through which these "scientists of technology" validate tradition and thereby lend themselves to political agendas and even party politics (one thinks particularly of "family values" and concepts of women's vs. men's work). One way to use the imagined past to define the present and the future is to naively conflate past and present. Archaeologists today are in the same situation in which Carroll found historians, contemplating timeless, theoretically uninteresting women. Of course, archaeologists generally try to avoid projecting modern practices, of say, present-day nomads or subsistence farmers, back into the past. They know that a modern Bedouin is not an ancient Israelite. There is one glaring exception to this circumspection, however: "Although archaeologists are generally cautious about simplistic ethnographic analogies, this has not been true with regard to the subject of gender" (Conkey and Spector, 1984:3).

The violations of scientific procedure are so persistent and so blatant that to this point, most of the discussions about gender in the archaeological literature seem to consist of feminists' comments on the lack of discussion. Nineteen eight-four was a little late for an entire discipline to be new to the theorization of gender, but that is when Conkey and Spector called for examining "the way archeologists perpetuate gender stereotypes" (p. 28) in a thirty-eight-page article soberly titled "Archeology and the Study of Gender." It seems that as of 1984, the entire discipline was in bad epistemological trouble.

We know of no archaeological work in which an author explicitly claims that we can know about gender in the past as observed through the archaeological record who then proceeds to demonstrate that knowledge or to describe how we can know....[but] the archaeological literature...is permeated with assumptions, assertions, and statements of "fact" about gender (1984:2).

Seven years after Conkey and Spector's challenge—seven lean years by the look of it—archaeologist Wylie (1991a), still wondering when it's all going to happen, gives her article the rather plaintive, questioning title: "Gender Theory and the Archeological Record: Why Is There No Archeology of Gender?" Another article of hers the same year features a section with the equally plaintive title, "Why Not Before Now?: Critical Analysis" (1991b). In case archeologists were not getting the point, Wylie registered the complaint that

Unacknowledged and unsubstantiated, indeed, manifestly untenable assumptions about gender—assumptions which presume the universality of the sexual division of labour, gender dimorphism, and commodification of sexuality typical in our own contexts—compromise the credibility of otherwise good archeology. (Wylie 1991b:18).

Archeology harbors these epistemological ills, acknowledges their existence, then as Eisner (1991:352) points out, does business as usual. In academe as elsewhere, people may acknowledge a problem, yet make no progress toward solving it. Instead, the discussion of non-progress begins ever anew, only to flag anew. Eisner cautions that,

Archeological literature traditionally contains the bias that males were the major protagonists in humanity's past, with women having a secondary or incidental role. While many prehistorians would have little trouble with this contention, their interest tends to fade after agreeing that such a bias exists....the identification and correction of biases in the data is [neglected].

Two years later, nothing seems to have changed. We have still another article with yet another plaintive, questioning title: Brown's (1993) "Feminist Research in Archeology: What Does It Mean? Why Is It Taking So Long?" Nor is the outlook promising as of 1996. "About half my students are women," according to Syro-Palestinian archaeologist William G. Dever, "but they are doing exactly the same kind of work the men are doing." And that work is characterized neither by bias-consciousness nor by theorizations of gender.

Three common archaeological practices demonstrate the lack of a scientific method in investigating gender and technology. First is the conflation of past with present, already discussed. Second is the practice of guessing, on the basis of paintings and sculptures, who did what kind of technological work, using what tools. Critiques of this method have been few and relatively recent. Speaking of a "dig" investigating Neolithic Europe, Hodder, in 1991, argues against his own prior conclusions and the assumptions behind them:

The data did not warrant detailed discussion of the actual roles of men and women. While women associated symbolically with houses, hearths and pottery, it remained possible that men played a dominant role in houses, in cooking, and in making and using pottery. Similarly the symbolic association between men and hunting does not mean that in practice women did not hunt (p. 11).

Even if a culture has left us a painting or a sculpture of someone in the act of hunting or weaving or cooking, we are not on sure ground. As Hodder (1991:13) reasonably reminds us, artists tend to show men doing the things the culture expects men to do, and women doing things women are expected to do.

"Cultural representations of gender rarely accurately represent male-female relations, men's and women's activities, or men's and women's contributions in any given society."

A third methodological problem is "the tendency to combine gender with technology" (Rice 1991:440). For example, some assume, instead of proving, that the scheme sometimes found in which "females define a household mode of production and males with potter's wheels and kilns define workshops" can be generalized across all cultures. A fourth methodological problem is that when archaeologists find objects buried near skeletons, they often simply guess who used which tools or utensils. In other words, if a woman is buried with a soup spoon, one would infer that her job in life was to cook soup. There are three catches here. One is that skeletons cannot always be sex-typed. Another is that goods are often assigned gender asso-

ciations through a series of questionable assumptions or circular reasoning, or both. A third is that the concept of "job" or "occupation" may be improperly projected onto other cultures.

Of course, in the best case, we can learn from bones about the sex of an individual and "[N]utrition, movement and load-bearing in locomotion, pregnancy and lactation in females, injury, and disease" (Morbeck 1991:40). Having determined whether the body belonged to a man or a woman, we might then draw inferences about the objects associated with the skeleton. Here is a man with a sword; he must have been a soldier. Here is a woman with a cooking pot, she must have been a housewife. But alas! assigning sex to skeletal remains may be difficult or impossible because

The most reliable skeletal features in modern humans that distinguish females from males are in the pelvis (St. Hoyme and Iscan 1989). However, although sex characters usually are evident, average species-typical features can be obscured and sex of individuals misidentified. Baskerville (1989), for example, shows that undernutrition and depressed growth rates produce similar pelvic shape in females and males.... The difficulties of separating the products of growth and maturation (modeling) and remodeling in adults as related to hormones, including estrogen, and the biomechanics of movement and load-bearing suggest that we still must be careful in our storytelling about explanations of pelvic variation in humans and inferred life history characters (Morbeck 1991:40).

Moreover, in over-excavated and often looted sites such as ancient Israel, it is rare to find a complete skeleton, largely because, for years, archaeologists, both professional and amateur, "tossed bones aside" as *ouininterestingō* (Dever, pers. comm. 1995). However, ambiguous physiological evidence does not stop the determined archeologist. In reviewing excavation reports on a fourth century Roman burial site in Belgium, Eisner (1991:352-7) discovered that the researchers had made several unwarranted assumptions. First, they assumed that grave goods associated with certain Roman skeletons represented gendered technologies. Second, they assumed that the associations were evidence as to the work (or recreations) in which the buried person had engaged during life. Third, they assumed that the technologies could tell them about the sex of the skeleton *and* that the skeletons could tell them about the gender-associations of the technologies! Eisner charges that in such studies,

The females will often be considered those with finer, smaller bones, determining factors which are obviously relative. In burials which cannot be sexed from skeletal remains, and where gender-defined grave goods are associated with the bodies, archaeologists may resort to sexing on the basis of types of goods.

This means, of course that the very parameter needing investigation—whether an object is indeed gender-specific—is assumed, while researchers use supposedly masculine or feminine artifacts as independent variables. The inquiry is defined out of existence. Eisner found that the report had judged skeletons to be female if they were discovered near jewelry, combs, hairpins, and dice, while male skeletons were thought to be those buried with knives, buckles, clasps and tools. However, "there is no reason," Eisner points out, "why males could not have used....combs, rings, and gaming pieces. Women could have used many of the iron utensils which were reputedly part of the male goods" (Eisner 1991:354).

In fact, through statistical analysis, she determined that the graves in question belonged, indeed, to two categories, but these were not male and female. Rather they were military (males only) vs. non-military (males and females), with allegedly "female" objects in several "male" graves. The archaeologists who did the study, however, had followed common practices of explaining away the evidence. They had suggested, for example, that knives or belt buckles buried with females represented gifts from males, or perhaps family heirlooms. A properly theorized archeology of gender and technology will, clearly, not be a simple achievement.

Things are even more complicated than these critiques imply. Even if we could somehow discover what some man or some woman was doing in real life, if we could, say, use science-fictional devices to snap pictures of a prehistoric killer with her hand still on the dagger or a potter with her hand on the half-formed pot, we still would not understand the relation of that action to people's work lives. Rice (1991:440b) suggests that the concept of an "occupation" may itself reflect an attempt "to squeeze occupational organizations of traditional societies into modern European frameworks," forcing an identification of each person with precisely one occupation, highlighting activities that are part of the money economy, and diminishing or entirely missing "the role of women in economic activity of any sort" (1991:440a).

Zihlman (1991:6) warns against taking "an isolated behavior...out of its context." In studying living populations of human beings or closely related animals, physical anthropologists investigate not merely the fact that somebody sometimes does something, but also how often, with what level of skill, and with what relation to other elements of social life. Zihlman draws on studies about non-human primates (chimpanzees) and women gatherers to find that in the observed populations, females use tools more often in food-gathering than do males, may spend more of their time acquiring and eating food than do males (due to the demands of pregnancy and lactation), are "active in foraging, collecting, processing and distributing food to other group members" (citing Lee, 1968-1969) and "live and work in a context with reproductive, social and ritualistic functions...[with] multidimensional lives...integrated into a wider society." Nor can we take one gender out of its context.

True gender-conscious analysis considers the relations and inter-relations of females and males and the recognized genders of a society, commanding more than simply envisioning women within prehistoric contexts.

[Such analysis] relies on social organization as a primary motivating factor in past culture systems. It incorporates gender as an active agency contributing to the production of the archaeological record, as gender relations are involved in and constitute all aspects of human society as we understand it (Bohlen 1991:400).

However, even if we could observe and quantify behavior in its social world, we would still not know what it meant. How did the activity fit into the conceptual world and the emotional environment in which it took place? Even if we refer to indisputably female activities such as gestating, bearing, and nursing, we still do not know what they meant, nor can we trace changes in meaning, especially for preliterate societies.

Information may be hard to get and harder to interpret even when people are available for interview and observation; "anthropological writings are themselves interpretations, and second and third order ones to boot...They are, thus, fictions" (Geertz 1973:15). Even ethnographers' accounts of personal conversations and contacts "raise serious problems of verification" (p. 16). We cannot interview citizens of tribes and empires long gone, let alone find informants with whom to verify our interpretations. Inventories of women's supposed artifacts, activities, or "work areas" such as many archaeologists have offered are products of speculation. It can hardly be emphasized too much that without an appropriate theoretical framework, one has no real access to the study of gender, past or present. In fact, one task of such theory is to tell us that there are many things we will never know about the past. The principal lesson a properly gendered theory brings us is probably restraint.

At the very least, without a sound theoretical base, we constantly risk falling into the cultural projections and assumptions that have encumbered past attempts. Another risk is that one may fall prey to a whole new batch of projections and assumptions. I certainly do not advertise feminist theory as a sure and certain guide to Truth. Jobling (1991:243), indeed, complains with some justification that,

Feminists have...not, for the most part, exploited the social sciences in an inadequate way, and have tended to replace one set of anachronisms with another. The term patriarchy is used loosely, out of its anthropological context. Twentieth-century assumptions and concerns are illegitimately projected into the past, as when large family size is taken necessarily to indicate the oppression of women.

Some of these anachronistic interpretations might well work against such feminist aims as, to pick an example not quite at random, the liberation of womankind. For instance, Maurer (1991:414) finds that feminist scholarly practice sometimes leads to the kind of descriptions one might find paralyzing. His complaint is worth quoting at length:

Gender, originally problematized as a cultural construct, becomes "naturalized." This [process] results in a sort of academic fatalism—studies of gender invariably fall into studies of gender hierarchy and gender oppression, even where such oppression may not exist. As numerous feminist scholars have pointed out, one of the major problems with this formulation is its ahistoricism, its amaterialism, its ethnocentrism and its over-generalized universalism (e.g. Yanagisako and Collier 1987). The resulting tendency to universalize the "nature" of gender hierarchy [leads to] the creation of analytic dichotomies used to "explain" this oppression, dichotomies which are usually more culture-bound than the original assumptions regarding gender itself.

The image of the low-tech woman working in "private space" is one universalized aspect of "gender hierarchy" that most of us have accepted as natural. It is so naturalized that many scholars, feminist or otherwise, rather than challenging it, have simply turned their energies to devising explanations for it. These explanations are, indeed, often "more culture-bound"—and more depressing—than the original assumptions about public and private space or women's and men's work.

## The Struggle for New Stories about Technological Woman

Ethnographers have observed that throughout much of the world today women perform by hand the same tasks for which men employ mechanized processes. Women shape pottery by hand, but men take charge of potter's wheels (Rice 1991:439). Similarly, women spin, using small, hand-held spindles, whereas men weave, operating looms. Why is this? Brown (1970:1074, cited with apparent agreement by Rice [1991:436]), implicitly accepting the accuracy of the model of the high-tech man, low-tech woman, explains that women have to combine all their activities with child care. They need "tasks that are repetitive, not dangerous, can be interrupted and resumed, do not require intense concentration, and do not require the participant to be far from home" (Brown 1970:1074). The "explanation," in other words, is that women need boring work in one spot.

Behind this explanation lurk several assumptions: The care of helpless young children belongs to women, all women. This care is the principal and defining feature of all women's work, to which all their other work must be subordinated. The locus of this universally female work is necessarily, unquestionably in the family home.

This formulation constitutes an implicit endorsement of the notion of (female) private space vs. (male) public space. It does not really explain why women could not use potters' wheels at home, as many craft potters do in our own culture today. Nothing is said about cultures in which both parents go to work in fields, factories, market-places or elsewhere, taking children with them or leaving them with grandparents or other male and female household members. Brown's simple account fails to address the diversity of human experience. It lumps together the work of millions of women of diverse ages, cultures, marital conditions, and millennia into one static, monolithic model. We recall Carroll's charge that historians describe women as everywhere unchanging and "irrelevant to the intellectually interesting questions of historical change."

Pacy (1983:100-101) and Rice (1991:442) see the same differences Brown sees between men's and women's work, but account for those differences through another culture-bound model (bound, that is, to our own culture). They emphasize male initiative rather than female constraints. Men are dynamic, rationally self-interested actors who appropriate women's tasks when new technology renders these interesting and profitable:

There is a broad negative correlation between women and tools of economic efficiency and/or power, whether these tools are the potter's wheel, the plow, the machete, the vote, or salary equality. When such tools are invented or adopted into a traditionally female activity, the activity shifts into the hands of males.

Women thereby become less productive as their jobs are taken over, or as they are denied access to the more efficient and productive technology (Rice 1991:442). To sum it up crudely, them as has gets; them as gets, produces. Rice draws on the sociology of technological diffusion, citing "the general tendency for innovations to be introduced to males, or for males to have more external social and economic contacts." Pacey ventures a more psychological explanation, one which invokes men's feelings as well as their rational-self-interest:

The reason men are attracted to mechanized jobs may be to do with the higher productivity and earnings associated with them, but seems also to be partly due to the way machines convey prestige. The modern male takes pride in being mechanically minded (Pacey 1983:100-101).

The result is familiar. Men do the high tech work, women do the rest. Very often, then, women may simply be left with tasks not affected by technological innovation (Pacey 1983:100).

All this well may be, but it explains little. Pacey speaks to men's feelings and states of mind, but leaves us wondering why women would not be equally "attracted" to mechanized jobs, and to "higher productivity and earnings," not to mention prestige and pride, these quiddities being in notoriously short supply, especially for women. Are not women motivated by rational self-interest? Instead, Pacey opposes an active, free-roving man to a helpless, implicitly stationary woman whom man and technology leave behind. We might call this the Technologically Jilted Woman model of diffusion and appropriation. We are reminded of Maurer's warning about "a sort of academic fatalism [whereby] studies of gender invariably fall into studies of gender hierarchy and gender oppression."

Nevertheless, both Rice's and Pacey's formulations have the virtue of being consistent with diffusion studies (Rogers 1983). Technology diffuses first, and sometimes only, to those in the community who have decision-making power, who have the opportunity to observe and try new things, and who can afford to take risks. For Pacey and Rice, these people would certainly be the men.

In summary, for Brown, women are naturally low-tech, given the lives they lead. For Pacey and Rice, the assumption is that women, like men, need the more complex, profitable technologies, but either men get to it first and hog it all or men see women benefiting from a technology and simply take it away from them. Women "are left" with "low" technology.

### Stories Women Tell About Technology

What, if anything, do scholars' models of male-appropriated technology tell us about the ways in which women experience and judge technology? Do women commonly see the world of technology as a lost paradise of productivity, profitability, prestige, and pride that ambitious men have wrenched from their unwilling grasp?

Not necessarily. A technophobic strand of feminist thinking maintains, to oversimplify, that technology is one of Man's viler inventions, unworthy of Woman. Through technology, man exploits, abuses, and ultimately will destroy humanity's habitat. Woman, supposedly, should be doing better. There is ample evidence that some women, at least, think of technology as not so much confiscated from them as rejected by them.

Indeed, we lack traditions of women's wonderful technologies on which to base a female self-concept as tool-using, technology-innovating humans. It hardly occurs to us that women have any technology to steal. Despite a perennial search for new premises and images, popular culture, mass media, and literature rarely depict women or girls as inventors or manipulators of interesting, complex technology. Not even science fiction, a genre devoted to technology, does so. On the other hand, it is evident that not all women would welcome such depictions.

As we have seen, male-oriented scholarship imagines a paleontological and archaeological past that would confirm its imagined, male-oriented present. Men provide human culture with active, inquiring, experimenting minds—with scholars, in fact. Therefore early men provided humans with technology—with culture, in fact. Female scholarship is locked in struggle with this somewhat self-congratulatory male imagination. Some feminist thinkers offer to substitute a self-congratulatory female image. They, no less than traditional male-oriented thinkers, tell stories about destructive Technological Man and Technologically Innocent, Care-giving Woman.

These stories, by whomever told, fit nicely into another of our cultural stories, that Man goes to War to Protect Woman. Man as Weapons Technologist, then, enables Woman to be a non-technological care-giver who sustains intimacy, care, truth, and love. For many feminists, an antipathy toward technology also relates closely to the notion that rationality and even linear story-telling are pernicious male inventions designed to defeat womanly feeling, "women's ways of knowing," and basic human morality. Women may take comfort from the thought that although they have little power, at least they are morally superior to men. Women have no responsibility for the viler deeds of mankind. Carol Tavris (1992:66-7) exposes the danger of this thinking:

By focusing on the men in power who make war (and the men in armies who fight), we overlook the women who support and endorse war, making it possible. By focusing on male violence, we overlook the men who promote pacifism and negotiation. By regarding aggressiveness as an entrenched and exclusively male quality, and pacifism as an inherent feminist quality, we overlook the ways in which societies in turmoil create dangerous, violent men, and we conveniently forget that most of the greatest pacifists and reformers in history have been men.

In fact, Claudia Koontz (1987) and Katherine M. Blee (1991) show that Nazi and Klan women, respectively, wrought as much destruction as their situations allowed, in addition to supporting the efforts of their men by welcoming them home to well-run households. For example, Klan women of Indiana in the 1920s organized and conducted boycotts ("Buy 100% American!") that drove black, Catholic, and Jewish victims out of business and out of town.

Under the circumstances, then, it may be rather self-serving for women to join with men in depicting history's female characters as private creatures who lurk gently in the background, rendering positive support to the family and community, venturing forth only in non-speaking walk-on parts, technologically backward and reluctant, while men alone shape history and fill the battlegrounds with corpses. However, self-serving images inevitably take on lives of their own and become counter-productive.

### Notes

1. See Genesis 4:21, 22, in which the origins of technology are framed in genealogical metaphors, in terms of masculine inventores: "...Jubal...was the ancestor of all who play the lyre and the pipe...Tubal-cain... forged all implements of copper and iron." Although Tavris (1992) points out that many feminists and others have in recent years defined men in terms of their supposed lack of nurturing qualities.
2. I have also seen, in popular culture, rather joking references to "Woman the Forager's "comedic descendent," Woman as Shopper".



3. According to David F. Noble, speaking in February 1993 to the Southern Humanities Council in Huntsville, Alabama.
4. Grave goods are objects found in ancient graves and usually presumed to have belonged to the interred during her or his lifetime.
5. She cites the amazement of seventeenth century Spanish historian Lopez de Cogolludo (1957: 14-15) that "there are many Indians who work at four or six trades where a Spaniard would have but one."

#### REFERENCES

- Bolen, Kathleen M. (1991). "Changing Gender Roles at the Gatherer-Hunter Transition to Farmer. The Archaeology of Gender. *Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 400-405.
- Brain, C.K. (1981). *The Hunters or the Hunted?* Chicago: University of Chicago Press.
- Brown, J.K. (1970). A Note on the Division of Labor by Sex. *American Anthropologist*. Vol. 72. 1073-1078.
- Brown, Shelby (1993). "Feminist Research in Archaeology: What Does It Mean? Why Is It Taking So Long?" In Nancy Sorkin Rabinowitz and Amy Richlin, editors, *Feminist Theory and the Classics*. New York: Routledge, pp. 238-271.
- Charnas, Suzy McKee (1978). *Motherlines*. New York: Berkley.
- Charnas, Suzy McKee (1974). *Walk to the End of the World*. New York: Berkley. Cobb, Clifford, Halstead, Ted, and Rowe, Jonathan (October 1995). "If the GDP Is UP, Why Is America Down?" *The Atlantic Monthly*, pp. 59-78.
- Conkey, Margaret W. (1991). "Does It Make a Difference? Feminist Thinking and Archaeologies of Gender." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 24-33.
- Conkey, Margaret W. and Spector, Janet (1984). "Archaeology and the Study of Gender." *Advances in Archaeological Method and Theory*. Vol. 7. 1-38.
- Dahlberg, Frances, ed. (1981). *Woman the Gatherer*. New Haven, CT: Yale University Press.
- Eisner, Wendy R. (1991). "The Consequences of Gender Bias in Mortuary Analysis: A Case Study." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 352-357.
- Fedigan, Linda Marie (1986). "The Changing Tole of women in Models of Human Evolution." *Annual Review of Anthropology* 15:25-66. Cited by Whelan (1991).
- Geertz, Clifford (1973). *The Interpretation of Cultures*. New York: Basic Books, Inc. Haraway, Donna (1986). "Primatology is Politics" by Other Means." In *Feminist Approaches to Science*, edited by Ruth Bleier. Pergamon. New York. Cited by Whelan (1991).
- Gilman, Charlotte Perkins (1979/1915). *Herland*. New York: Pantheon.
- Haraway, Donna J. (1991). "Daughters of Man-the-Hunter," In *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge.
- Hauptman, Judith, Associate Professor of Rabbinics, Jewish Theological Seminary (personal communication, 1992)
- Jobling, David. "Feminism and 'Mode of Production' in Ancient Israel: Search for a Method." In Jobling, David, Day, Peggy L., and Sheppard, Gerald T., Editors (1991). *The Bible and the Politics of Exegesis*. Cleveland, OH: The Pilgrim Press, pp. 239-251, 350-355.
- Kessler, Carol Farley (1984). "Introduction." *Daring to Dream*. Pandora.
- Lee, Richard B. (1968). "What Hunters Do for a Living or How to Make Out on Scarce Resources." In *Man the Hunter*. Edited by Richard B. Lee and I. DeVore. Chicago: Aldine, pp. 30-48.
- Lee, Richard B. (1969). "Kung Bushman Subsistence: An Input-Output Analysis." In P. Vayda, Ed., *Environment and Cultural Behavior: Ecological Studies in Cultural Anthropology*. Garden City, NY: Natural History Press.
- Leone, M. P. (1973). "Archeology as the Science of Technology: Mormon town Plans and Fences." In C. L. Redman, ed., *Research and Theory in Current Archaeology*. New York: John Wiley and Sons.
- Lopez de Cogolludo, Fr. D. (1957). *Historia de Yucatan*. Mexico.
- MacKinnon, Catherine A. (1987). *Feminism Unmodified: Discourses on Life and Law*. Harvard University Press. Cambridge, Massachusetts.
- Maurer, Bill (1991). "Feminist Challenges to Archeology: Avoiding An Epistemology of The Other." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 414-419.
- Morbeck, Mary Ellen (1991). "Bones, Gender, and Life History." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 39-45.
- Noble, David F. (1992). *World Without Women, The Christian Clerical Culture of Western Science*. New York: Oxford University Press.
- Piercy, Marge (1991). *He, She and It*. New York: Ballantine Books.
- Rice, Prudence M. (1991). "Women and Prehistoric Pottery Production." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 436-442.
- Rosaldo, Michelle 1980 "The Uses and Abuses of Anthropology: Reflections on Feminism and Cross-Cultural Understanding." *Signs* Vol. 5.
- Tepper, Sheri (1989). *The Gate to Women's Country*. New York: Bantam Books.
- Vonarburg, Elisabeth (1992). *In the Mothers' Land*. New York: Spectra Special Editions.
- Walde, Dale and Willows, Noreen D., editors (1991). *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association.
- Whelan, Mary K. (1991). "Gender and Archaeology: Mortuary Studies And The Search For the Origins Of Gender Differentiation." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 358-365.
- Willoughby, Pamela R. (1991). "Human Origins and The Sexual Division of Labour: An Archaeological Perspective." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association, pp. 284-291.
- Wolf, Naomi (1991). *The Beauty Myth: How Images of Beauty are Used Against Women*. New York: Doubleday.
- Wylie, Alison (1991). "Feminist Critiques and Archaeological Challenges." In Dale Walde and Noreen D. Willows, editors, *The Archaeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archaeological Association of the University of Calgary*. University of Calgary Archaeological Association.
- Zihlman, Adrienne L. (1991). "Gender: The View From Physical Anthropology." In Dale Walde and Noreen D. Willows, editors, *The Archeology of Gender. Proceedings of the Twenty-Second Annual Conference of the Archeological Association*, pp. 4-10.

# The Symbolic Function Of 'Technique' As Ideogram In Ellul's Thought

by Daryl J. Wennemann, University of Scranton

## Abstract

In this essay I compare Ellul's use of the term 'technique' to Rudolf Otto's use of the term 'Holy'. Otto argues that the idea of the holy is an ideogram that has a symbolic function that goes beyond the representative function of a mere concept. This is necessary owing to the non-rational character of the holy as well as the fact that the holy contains a unity of opposites that is not subject to conceptualization. I argue that Ellul's depiction of technique exhibits similar characteristics. Thus, his use of the term 'technique' may also be understood as having the symbolic function of an ideogram.

## Introductio-Apologia

There are a number of points of method in Jacques Ellul's thought that remain obscure. What is especially peculiar is that this seems to have been partly his intention. Ellul has pointed to the provocative character of his writings. In an interview with Madeleine Garrigou-Lagrange, Ellul revealed that an important goal he set for himself was to spark the initiative of his readership to find their own explanations regarding the method he employed. "I've never given an explanatory guide to my writing. I waited for readers to take the initiative and find their own explanations."<sup>1</sup> This essay is just such an attempt to find my own explanation for Ellul's use of the term 'Technique'. Despite the fact that Ellul attempted to define the term in a precise way, I believe that a considerable degree of clarification is still possible.

Here I intend to take the initiative in order to provide an explanation that Ellul himself might not have recognized. In comparing Ellul's use of the term 'Technique' with Rudolf Otto's use of the term 'holy' I may very well be creating what Martin Marty called "a creative misuse"<sup>2</sup> of Ellul's thought. But in taking the risk of misrepresenting Ellul's thought in this way, we also risk the possibility of gaining new knowledge that may aid us in coming to terms with the technological world we inhabit.

## Otto and The Idea of The Holy

An important focus of Rudolf Otto's treatment of the idea of the holy is that the phenomenon he wished to study has a basis in the non-rational elements of human religious experience. This posed a serious problem for Otto in providing an adequate way to conceptualize such an important dimension of human experience. Approaching the problem from a Kantian perspective, Otto thought in terms of a schema of the non-rational that would exhibit an a-priori structure of the non-rational aspects of human experience. Owing to the non-rational element within the holy, Otto argued that it is not possible to represent the holy in a simple concept. In treating the biblical depiction of the wrath of God, for example, Otto declares, "It will be again at once apparent that in the use of this word we are not concerned with a genuine intellectual 'concept', but only with a sort of illustrative substitute for a concept."<sup>3</sup> He goes on to assert that the term 'wrath' is the ideogram of the majesty and energy of the numen, the object of a numinous experience. The wrath of God is awe-inspiring which, in itself, is a non-rational state in response to the reality of the divine orge.

An ideogram is thus an ideational substitute for a concept that is capable of grasping the non-rational character of the experience of the

holy as it is manifested in the wrath of God. According to Otto's conception, an ideogram is able to symbolize the complex experience (or perhaps the experience-complex) he denotes "the numinous state of mind", which contains a deep existential significance. And, of course, Otto holds that the numinous state of mind provides access to the holy object itself as its intentional correlate.

Otto's approach is interesting because he seems to have carried out a sort of phenomenology of the holy. The complexity of the experience is such, according to Otto, that a mere concept of the holy could not grasp the reality as it is experienced in its concreteness. For the holy contains within itself opposing characteristics. It is both fascinating and terrifying. As Otto puts it,

We have been attempting to unfold the implications of that aspect of the *mysterium tremendum* indicated by the adjective, and the result so far may be summarized in two words, constituting, as before, what may be called an 'ideogram', rather than a concept proper, viz. 'absolute unapproachability'.<sup>4</sup>

Otto argues that the ideogram of the divine *mysterium* is an analogical notion derived from the natural experience of mystery.<sup>5</sup> As such, it cannot exhaust the meaning of the numinous. The very notion of mystery itself seems to place the *mysterium tremendum* beyond human comprehension. The "wholly other" lies beyond the categories of human comprehension. But, interestingly, Otto also suggests that it is the very *mysterium* character of the divine that attracts us. Otto provides an excellent summary statement of this peculiar situation,

The daemonic-divine object may appear to the mind an object of horror and dread, but at the same time it is no less something that allures with a potent charm, and the creature, who trembles before it, utterly cowed and cast down, has always at the same time the impulse to turn to it, nay even to make it somehow his own. The 'mystery' is for him not merely something to be wondered at but something that entrances him; and beside that in it which bewilders and confounds, he feels a something that captivates and transports him with a strange ravishment, rising often enough to the pitch of dizzy intoxication; it is the Dionysiac-element in the numen.<sup>6</sup>

In the end, Otto holds that it is necessary to bring the non-rational experience of the holy into the light of clear concepts. But there is a degree to which this does violence to the experience. The symbolic function of an ideogram is to find a middle ground between the sheer non-rational experience and the rational concept.

But it is quite otherwise with religious 'bliss' and its essentially numinous aspect, the *fascinans*. Not the most concentrated attention can elucidate the object to which this state of mind refers, bringing it out of the impenetrable obscurity of feeling into the domain of the conceptual understanding. It remains purely a felt experience, only to be indicated symbolically by 'ideograms'.<sup>7</sup>

## Ellul's Phenomenology of Technique

In the translator's introduction to the revised American edition of *The Technological Society*, John Wilkinson depicts Ellul's study of technique as being a phenomenology of the technological society. In his view, "*The Technological Society* is not a 'phenomenology of mind' but rather a 'phenomenology of the technical state of mind.'"<sup>8</sup>

A peculiar difficulty associated with such a phenomenology is that it must be able to grasp the irrational or non-rational aspects of the technical milieu as well as the rational ones. The experience of those who inhabit the technological society is necessarily complex and

varied in content. And this is what Ellul wished to grasp, i.e., the experiential effects of the technical milieu in its concreteness. This is the only access we have to the technological system as an objective reality. In this regard, Ellul notes,

We are touching on a trait that I consider important: I never write ideas. I have always attempted to transmit exactly what I have experienced, in objectifying it. I have always thought on the experiential level.<sup>9</sup>

Here Ellul evinces the influence of Marx on his thought. It must be remembered how Marx distrusted the influence of ideologies to affect our ability to experience reality within an alienated condition. One of the important functions of scientific theory for Marx was to break through the veil of false consciousness produced by the social environment. This entailed avoiding a science of ideas that might exhibit a high degree of coherence but misses the concrete factors of lived experience. As Ellul points out,

Marx always vigorously denied that theory could be reduced to ideas. Theory is a strictly scientific construction. Never is it the same as more or less precise or coherent ideas. Theory must be revised by practice. Ideas have no importance for Marx.<sup>10</sup>

This attitude is confirmed in Ellul's work *The Technological System*. In this work Ellul treats the concept of technique in a chapter devoted to the problem of defining the object of his study, now the technological system. While it is necessary to develop a certain conceptualization of technique, Ellul is quick to point out that he is not simply studying the concept. His is not a simple conceptual analysis of technique. By itself the concept is inadequate to grasp the totality of the technological system in its dynamic development. This is perhaps what distinguishes *The Technological Society* from *The Technological System*. The first study represents what August Comte called social statics. Its object is the technological phenomenon. The second study represents what Comte called social dynamics. Its object is the technological system which includes the dynamic flow of change within the technical system.

Now, in both cases Ellul is careful not to focus on the mere concept as a sort of abstract model that can be studied apart from the irrational or aleatory factors that impinge upon its operation. The pure rationality of technique is matched in Ellul's analysis by the many irrationalities that arise in the concrete setting of technique. As Ellul asserts,

How can we deal with technology as though it had a kind of existence in itself? How can we analyze a technological system as a sort of clock running all by itself? Technology exists only because there are human beings participating in it, making it function, inventing, choosing. To claim we can examine technology without regarding the chance elements, the irregularities produced by man, means proceeding to an illegitimate and, moreover, impossible abstraction.<sup>11</sup>

Within the dialectical whole making up Ellul's thought it is possible to say that technique has a bi-polar structure that can be characterized as rational/irrational. This can be seen in a very recent work, *The Technological Bluff*. Owing to the specifically human contribution to the makeup of technique, there is an irresolvable irrationality within the technical system.

In other words, except in algebra there is no such thing as purely rational human thinking. Even our most rigorous thinking is inevitably intermingled with opinions and sympathies and feelings. How often our reasoning and knowledge reflect the causes we advocate! Our thinking is never pure. That of computers is always pure unless it is programmed to take into account a specific feature. Yet even though its thinking is rational, there is often an irrational factor in the way that one poses a problem (to the computer!) or in the choice of the problem that one poses.<sup>12</sup>

In a sense, the rationality of technique is surrounded by irrationalities. This is the source of the conflict to which Ellul continually points.<sup>13</sup> Technique tends to absorb these irrationalities. Perhaps this is its achilles heel. After all, the human factor is not just a foreign

element in the structure of technique. It comes from us. It is a human product.

In *The Technological Society*, Ellul actually depicts technique as a monster having sinews made of human flesh. "In this chapter we have sketched the psychology of the tyrant. Now we must study his biology: the circulatory apparatus, the state; the digestive apparatus, the economy; the cellular tissue, man."<sup>14</sup> As such, there is a non-rational or perhaps even irrational element within the technological corpus. Ellul holds out the possibility that this non-rational element could act as a sort of virus infecting technique, undermining its pure rationality. But technique also has the ability to develop antibodies. In order to maintain its health technique must incorporate the irrational elements into its system, assimilating everything to its standard of rationality. Thus, compensations arise in the areas of entertainment, politics, religion, etc.

For our purposes it is only necessary to point out that the bi-polar structure of technique is resistant to simple conceptualization. It can, however be symbolized in such a way as to make it accessible to human experience. Otto pointed out, in this regard, that to understand conceptually and to know are two different things.<sup>15</sup> My suggestion is that Ellul's notion of technique has the symbolic function of an ideogram in that it schematizes what is really a deeply imbedded experience for persons inhabiting a technological environment.

David Lovekin's study of technological consciousness confirms this to a certain degree. Lovekin argues that Ellul's theory of technique is a symbolic construction that opposes the reality of technique.<sup>16</sup> This symbolic function is essential, in Ellul's view, for gaining mastery over the objective environment. As Ellul states,

By the symbolic transformation of reality man, on the one hand, establishes a mediation between reality and himself, and on the other, becomes adept at manipulating reality by manipulating symbols. In other words, he creates the possibility of acquiring a non-material grasp on reality, without which he would be completely unprovided for...The stick used by man ceases to be merely a piece of wood and becomes, for example, a bludgeon. The function of symbolization precedes the fabrication of the tool and that is what makes it possible to develop the conception of a tool or of a weapon.<sup>17</sup>

One of the most serious dangers posed by technique is that it tends to subvert this symbolic function by producing its own symbolic universe. Without knowing it, we become enmeshed in a battle against shadows which, in itself, maintains the technological system. The struggle for freedom in a technological society is thus to a great extent a struggle to regain the upper hand, so to speak, by developing appropriate symbols so that we might exercise some control over the technological apparatus. Here Karl Mannheim's insight into the positive role of the irrational is pertinent.

We must, moreover, realize, that the irrational is not always harmful but that, on the contrary, it is among the most valuable powers in man's possession when it acts as a driving force towards rational and objective ends or when it creates cultural values through sublimation, or when, as pure elan, it heightens the joy of living without breaking up the social order by lack of planning. In fact, even a correctly organized mass society takes into account all these possibilities for the molding of impulses. It must, indeed, create an outlet for an abreaction of impulses since the matter-of-factness of everyday life which is due to widespread rationalization means a constant repression of impulses. It is in these offices that the function of "sports" and "celebrations" in mass society as well as that of the more cultural aims of the society is to be found. All the great civilizations in history have hitherto been able to use sublimations to canalize and give form to irrational psychic energies.<sup>18</sup>

### Calling Technique's Bluff

In his work, *The New Demons*, Ellul describes how technique actually takes on a sacred aura, giving it the status of an untouchable standard. Ellul considers it to be a deep human need to sacralize those aspects of our environment that appear to be ultimate. As a new artificial environment, technique has the power to desacralize our first

natural environment, making it an object of manipulation and control. By a sort of dialectical reversal, whatever has the power to desacralize one realm of human experience becomes the new sacred. The modern sacred is complex in its structure. The sacred of respect is matched by a sacred of transgression.

I shall set forth as a proposition that the modern sacred is ordered around two axes, each involving two poles, one pole being respect and order, and the other transgression. The first axis is that of 'technique/sex', the second is the 'nation/revolution' axis. Those are the four factors (I say exclusively of every other) of our modern society.<sup>19</sup>

The sacred quality of technique is essential to the assimilation of the human element into the technical system. The power of technique is such that it repels human beings on a deep psychological level. But the power of the sacred is such that it also attracts at the same time. Ellul saw this very early in his study of technique.

Nothing belongs any longer to the realm of the gods or the supernatural. The individual who lives in the technical milieu knows very well that there is nothing spiritual anywhere. But man cannot live without the sacred. He therefore transfers his sense of the sacred to the very thing which has destroyed its former object: to technique itself. In the world in which we live, technique has become the essential mystery, taking widely diverse forms according to place and race. Those who have preserved some of the notions of magic both admire and fear technique. Radio presents an inexplicable mystery, an obvious and recurrent miracle. It is no less astonishing than the highest manifestations of magic once were, and it is worshipped as an idol would have been worshipped, with the same simplicity and fear.<sup>20</sup>

The tension involved in this complex reaction has the effect of paralyzing persons within a technological milieu. The resulting paralysis in the face of the simultaneous attraction/repulsion of technique is perhaps the most important factor in the system's self-constitution. An important purpose in Ellul's study of the sacred character of modern technique is to desacralize the technological mysterium. This is a condition for the liberation of the person from technological determination.

Reinserted into a sacred, a prisoner of his myths, he is completely alienated in his neoreligions—this brave 'modern man.' Every religion is both necessary and alienating. To smash these idols, to desacralize these mysteries, to assert the falseness of these religions is to undertake the one, finally indispensable liberation of the person in our times.<sup>21</sup>

Now, my argument is that in his study of technique Ellul must be able to penetrate the ambiguous structure of the sacred. A simple concept of technique is not possible, owing to the fact that concepts are always exclusive of their contraries. Thus, a concept of technique could not carry the burden of representing both the rational and irrational character of technique as an object of sacred awe.<sup>22</sup> As an ideogram, the term 'technique' must be able to do more than represent its object. It must be able to mediate a complex experience including opposite qualities of attraction and repulsion.

This method of symbolizing technique gives Ellul a purchase on technique so that he can effectively call technique's bluff. This is the purpose of Ellul's recent work, *The Technological Bluff*. Ellul's concern in this study is to point to the many lacunae in the technological system and the ways in which technical discourse covers them up. The many ambiguities, the uncertainty, lack of balance, and unpredictability of technique all constitute, in Ellul's view, a huge wager that the people of the twentieth century have unconsciously placed on technique. Indeed, American readers may not be generally aware that this was the original French title of *The Technological Society*. Ellul's great 1954 study of technique was titled, *La Technique ou l'enjeu du siècle, Technique or the Gamble of the Century*.

Ellul's message is that we have staked our lives on the efficacy of technique. Is it any surprise that within such a life or death game modern people feel the need to insure everything? The perspective of faith that Ellul places in opposition to technique would suggest that

human life, and perhaps the whole natural creation, is not a game but a gift.

In our time, the life of freedom and the responsibility that goes with it begins by calling technique's bluff. Then, perhaps, the next century may not be seduced into playing the same game.

## NOTES

1. Jacques Ellul, *In Season, Out of Season, An Introduction to the Thought of Jacques Ellul*, Based on Interviews by Madeleine Garrigou-Langrange, Harper & Row, 1982, p. 73.
2. Martin E. Marty, "Creative Misuses of Jacques Ellul", in *Jacques Ellul: Interpretive Essays*, edited by Clifford G. Christians and Jay M. Van Hook, University of Illinois Press, 1981, pp. 3-13.
3. Rudolf Otto, *The Idea of the Holy*, translated by John W. Harvey, Oxford University Press, 1958, pp. 18-19.
4. *Ibid.* p. 19.
5. *Ibid.* p. 26.
6. *Ibid.* p. 31.
7. *Ibid.* pp. 58-59.
8. Jacques Ellul, *The Technological Society*, translated from the French by John Wilkinson, with an introduction by Robert K. Merton, Vintage Books, 1964, p. xiii.
9. Jacques Ellul, *In Season, Out of Season*, p. 189.
10. Jacques Ellul, *Jesus & Marx, from Gospel to Ideology*, translated by Joyce Main Hanks, William B. Eerdmans Publishing Company, 1988, p. 132.
11. Jacques Ellul, *The Technological System*, Seabury, 1980, p. 84.
12. Jacques Ellul, *The Technological Bluff*, William B. Eerdmans Publishing Company, 1990, p. 164.
13. Cf. Jacques Ellul, *The Technological System*, Seabury, 1980, p. 74. The Computer faces us squarely with the contradiction already announced throughout the technological movement and brought to its complete rigor — between the rational (problems posed because of the computer and the answers given) and the irrational (human attitudes and tendencies). The computer glaringly exposes anything irrational in a human decision, showing that a choice considered reasonable is actually emotional. It does not follow this is translation into an absolute rationality; but plainly, this conflict introduces man into a cultural universe that is different from anything he has ever known before. Man's central, his — I might say — metaphysical problem is no longer the existence of God and his own existence in terms of that sacred mystery. The problem is now the conflict between absolute rationality and what has hitherto constituted his person. That is the pivot of all present-day reflection, and, for a long time, it will remain the only philosophical issue. In this way the computer is nothing but, an nothing more than, [technique]. Yet it performs what was virtually the action of the technological whole, it brings it to its perfection; it makes it obvious.
14. Jacques Ellul, *The Technological Society*, p. 147.
15. Rudolf Otto, *The Idea of the Holy*, translated by John W. Harvey, Oxford University Press, 1958, p. 135.
16. Cf. David Lovekin, *Jacques Ellul's Philosophy of Technological Consciousness*.
17. Jacques Ellul, "Symbolic Function, Technology and Society," *Journal of Social and Biological Structures*, 1:207-218 (1978), p. 208.
18. Karl Mannheim, "The Crisis in Valuation," in *The Technological Threat*, ed. Jack D. Douglas, Prentice Hall, 1971, pp. 62-63.
19. Jacques Ellul, *The New Demons*, Seabury, 1975, p. 70.
20. Jacques Ellul, *The Technological Society*, p. 143.
21. Jacques Ellul, *The New Demons*, p. 228.
22. Cf. David Lovekin, "Technology and the Denial of Mystery", p. 75. "For Ellul, mystery is that which cannot be spelled out in contradictory terms; mystery is that which transcends and gives meaning to the [here] and now." (spelled "hear" in the original)

# Book Reviews

*Gender on the Line: Women, The Telephone, and Community Life* by Lana Rakow, (Urbana: University of Illinois Press, 1992).

Reviewed by Jonathon Sterne  
University of Illinois at Urbana Champaign

Among the older generation in a small Swedish community in northeastern Minnesota, it is still common to find men who will refuse to answer the phone when at home. As my friend Judy Andersen tells it, these people grew up with an understanding of the telephone as a woman's space, and this continues to shape telephony in their community. Some men will even have their wives call the hardware store to ask about tractor parts rather than do it themselves. In small communities across the nation, one can find similar stories.

Lana Rakow's already classic *Gender on the Line* chronicles the social practice of telephony in another small midwestern town which she calls Prospect. Through ethnography and historiography, Rakow develops a nuanced account of the telephone in Prospect's community life and in the social production of gender. *Gender on the Line* is one of a very few full-length cultural studies of the telephone. The first half of the book focuses on a history of Prospect and its telephone company. The second half consists of extensive interviews with six women of Prospect, each representing a different part of the community and a different experience of the telephone. Prospect is remarkable for both maintaining an independent phone company into the 1980s and for that company being owned and run by a woman until 1983. By studying the telephone in a small community, Rakow is able to consider the telephone in the context of the relationships of the people it connects. Thus, *Gender on the Line's* richness of ethnographic detail and local focus make it a central text among critical studies of the telephone. But the cutting edge of Rakow's analysis lies in its feminist orientation: she argues that the telephone is central in producing the gendered division of labor within the community. At the same time, the telephone is itself a gendered social practice.

The title *Gender on the Line* is meant as a double entendre, and also points to two interrelated themes of Rakow's book. First and foremost, Rakow treats gender not as a fixed category but as a *problem*. Since gender is socially produced and reproduced, it is prone to contestation and crisis. Thus, the telephone is a key to understanding the production and reproduction of gender relations in Prospect. Second, in the best tradition of feminist scholarship, Rakow shows how telephony is a gendered set of social practices. Gendered meanings are at the very center of the telephone's social life; thus, an understanding of gender is crucial to a substantive theory of the telephone. This is a useful corrective to scholarship on the telephone that treats it either as a neutral instrument suspended outside of a gendered social world (the instrumentalist view) or as a total, ungendered mediation of social life (the substantivist view). Her critique of Stephen Kern is perhaps most apt in this respect:

Because the telephone *can* transcend space and time and bypass social hierarchies, these writers [such as Kern] have made the mistake of assuming that technical possibility translated into social practice. To test this assumption, we must ask

who has been able to use the telephone for these purposes, and what the consequences have been for those who have not been able to do so.

By demystifying the telephone and showing it to be enmeshed in the social world of gender, she simultaneously forecloses the possibility of universalisms like Kern's and constitutes a major theme of her own analysis. Rather than transcending space and time, the telephone is part of negotiating women's relationships to different places and restrictions on movement. In Chapter 3, "The Telephone and Women's Place" Rakow offers several accounts of this process: women who have moved for their husbands' careers use the phone to maintain relationships with distant friends and family; women who have less access to transportation use the phone to coordinate activity and get the most out of every trip; women whose obligations to their children restrict their mobility use the phone to maintain social relationships outside the household; other women use the phone to help ameliorate fears about being home alone. Thus, the telephone is a key to understanding the spatial organization of gender.

This theme blends with Rakow's recuperation of women's talk and her discussion of their use of the telephone. Throughout the book, Rakow critiques perspectives that trivialize women's talk on the phone, and instead shows how it is central to maintaining community and family life. In Chapter 2, Rakow characterizes women's talk as "visiting," the exchanging of information about personal relationships, events in one's life, and one's family. Since women spend more time at home, the telephone provides an opportunity to "get out" and talk with people more often. It also offers an opportunity for interpersonal intimacy that is unavailable at the local coffee table or in other semi-public contexts. The theme of women's talk also pervades the interviews. Most interviewees cast their talk in terms of relationships: Nettie disapproves of "idle talk" but uses the phone for community work and care-giving; Ethel, an elderly woman who can't get out as much as she used to, uses the phone to keep up with old friends and to maintain social contact in the community; conversely, Carolyn, who moved to Prospect recently, uses the phone to maintain relationships outside the community; Gayle used the phone as an escape when she was a housewife, and teenagers Kristin and Amy use the phone to provide some connection with the outside world to alleviate fears of being home alone at night. In each of these cases, the phone becomes a central part of women's lives and a central aspect of the gendered division of community life -- compensating for distance or isolation, but in the same stroke preserving the social organization of gender by making it easier to live with.

As Rakow offers in her introduction, *Gender on the Line* uses the telephone as a way of mapping gender relations in Prospect. This remains a central tension in her study, and points to a larger issue: how to develop a substantive theory of technology in the context of a larger social analysis. Unavoidably, Rakow shifts between instrumental and substantive discussions of the telephone. In the former, the telephone is simply a conduit for existing social relations external to it; in the latter, she considers telephony itself as a social practice and telephone and meanings around it as artifacts of social life. To a certain degree, this shifting is a matter of focus and balance, but it also points to some more confounding questions for social theory: How do we discuss technology when it's not the sole or central focus of critical analysis (as in Rakow's case)? How do we account for gender in a substantive

theory of technology? Clearly, gender plays a tremendous role in the production of technology and technology plays a major role in the production of gender, but neither construct is entirely determined by the other.

Beyond these basic questions, Rakow's analysis has additional implications for feminist theory. Carol Stable has effectively shown the problems of falling into "technophilia" (celebration of technology) or "technophobia" (dismissal of technology) in feminist theory, and Rakow's analysis avoids both traps. She treats technology itself as a site of contestation, thus avoiding the kind of essentialism involved in more technophobic feminism that posits technology as a purely male domain, while also keeping in mind the larger context of patriarchy that conditions any woman's use of technology. In this way, Rakow is able to move beyond the debates in feminist theory around essentialism and anti-essentialism, and her work is consonant with other areas of feminist scholarship moving beyond these binarisms. While I doubt very much that Rakow would associate herself with the work on gender "performativity" inspired by Judith Butler, *Gender on the Line* offers a cogent, coherent account of gender produced and performed. Like Butler, Rakow interprets the thesis that gender is socially produced as a call to studying its production, rather than treating gender as a fixed and stable category. In short, Rakow's work can be read in the context of current debates of feminist theory although she herself does not foreground these debates. While there currently exists little dialogue between high theoretical ruminations on Butler's concept of performativity and more empirical ethnographic work like Rakow's, as readers, we should make those connections across the traditional theory/research divide in feminist scholarship.

Concerning the study of technology, Rakow's analysis raises serious questions about the possibility of considering a single technology in isolation from a substantive perspective. For instance, how did the influx of domestic communications technologies like the radio, phonograph and television (in addition to the telephone) affect domestic gender relations in places like Prospect? Consider Raymond Williams' famous concept of mobile privatization—the tendency for a society to become more spatially diffused and mobile through increased development and dependence on communications and transportation technologies. The social history of the telephone is key to understanding mobile privatization, but we can't consider the telephone separately from the other elements of mobile privatization affecting communities like Prospect: the growth of highways and private automobile ownership and the decline of public transportation; the nationalization of food, drug, and clothing retail and the concurrent rise of malls and supermarkets, decline of downtowns, and flight of capital from local circuits of exchange (e.g.); the growth of mass media such as phonography, radio, television and film replacing community festivals and traveling shows; the rise of subdivisions and diffused models of urban planning; the growth of a feminized labor force in the "service" industries, and so forth. While Rakow acknowledges the importance of these issues, they are beyond the scope of her study — yet they demand further attention.

*Gender on the Line* is thus an important work both for its own nuanced analysis and for the field of questions it raises. Beyond the obvious "directions for further research" implied by her work — such as studies of women and the telephone in urban or suburban environments, or the gendered use of communications in work environments — Rakow's book speaks to a whole range of other issues. *Gender on the Line* can be read in a context of common concern between feminist theory and ethnography; and it has quickly become required reading for anyone seriously interested in critical scholarship on the telephone, or more generally, on gender and technology.

## NOTES

1. Steven Lubar's *Infoculture* (New York: Houghton Mifflin, 1993) and Claude S. Fischer's *America Calling* (Berkeley: University of California Press, 1992) offer useful social accounts of the telephone. While both cite Rakow's work as foundational, neither takes gender as a central concern.

2. Rakow, p. 4

3. See Carol Stable, *Feminism and the Technological Fix* (Ann Arbor: University of Michigan Press, 1994).

4. Performativity is an issue throughout Butler's work, but is first advanced after a critique of Gayle Rubin's sex/gender dichotomy in *Gender Trouble* (New York: Routledge, 1992).

5. See Raymond Williams, *Television: Technology and Cultural Form* (New York: Schocken, 1973).

*Feminism Confronts Technology*  
by Judy Wajcman, (University Park, P.A.: Pennsylvania State University Press, 1991), 184pp.

*Reviewed by Jacqueline Ciaccia*  
*University of Illinois*

Men's monopoly over technology has created several political power struggles. Stereotypes and the de-valuing of women's contributions to science perpetuate the patriarchal dominance of technology in today's world. Judy Wajcman in *Feminism Confronts Technology* addresses the fairly new field in feminist scholarship which centers on the debate over gender and technology. Wajcman questions the influence of technology on today's women. She examines several technical spheres from a broad cultural standpoint in which technology is seen as a social construct. Wajcman begins her book with an historical look at science and the emergence of power driven technologies. She continues from there to show how the technological society has depowered women by overlooking and devaluing the feminine while lauding the masculine.

Wajcman makes her task manageable by limiting her defense to specific technologies. She prefaces her work by stating that she does not, "deal with the technologies of surveillance and political control, nor with energy technology. Various aspects of information and communication technologies have also been excluded" (ix). Instead, she devotes a chapter each to some of the most politically hot technologies that highlight women's struggles: the technology of production, reproductive technology, domestic technology, and the built environment.

The publications of feminist scientists and their assertions of the historical and sociological relationships between gender and science create the foundation for a unique analysis of women's relationship with technology. Further, the connection between technology and gender is enhanced by presenting scientific knowledge as equivalent to patriarchal knowledge. What makes the argument work is Wajcman's choice to go beyond an essentialist assertion that a feminine value -- based science should replace the present masculine one. She recognizes that such replacement theories will not solve the problems of inequality present in today's technological society. Since Wajcman's task is a cultural one, she demands that we simultaneously look for a new set of societal values to focus on.

The first thing that must be said is that the values being ascribed to women originate in the historical subordination of women. The belief in the unchanging nature of women and their association with procreation, nurturance, warmth and creativity, lies at the very heart of traditional and oppressive conceptions of womanhood. Women value nurturance, warmth and security or at least we believe we ought to, precisely because of not in spite of, the meanings culture and social relations of a world where men are more powerful than women (p.9).

The first sphere Wajcman enters is that of production and paid work. The existing sexual divisions of labor are examined from a technological standpoint. Looking at office automation and other new technologies, for example, it becomes clear that the new "liberating" technological advances are simply fresh ways to make the way women's employ ability is repressed while new health and safety concerns emerge.

Chapter three is cleverly titled "Reproductive Technology: Delivered Into Men's hands." The strength of the argument in this chapter is in the historical critique of scientific and medical knowledge as gendered. Further, the age-worn view of the body as machine and the physician as technician is challenged.

Nowhere is the relationship between gender and technology more vigorously contested than in the sphere of human biological reproduction . . . Central to this analysis and of increasing relevance today is the perception that the processes of pregnancy and childbirth are directed and controlled by ever more sophisticated, and intrusive technologies. Implicitly in this view

is a concept of reproduction as a natural process, inherent in women alone, and a theory of technology as patriarchal, enabling the male domination of women and nature (p. 54).

Domestic issues are often at the forefront of feminist arguments. The same follows for Wajcman who shows how domestic technologies oppress rather than liberate the home lives of women. The first myth she dispels is that industrialization improved the lives of housewives. The proof is similar to that of the paid work place: even though the tasks performed became less physically demanding, mechanization created a whole new set of demeaning choices to replace the ones eliminated. For example, the office worker's typewriter may have been replaced by a word processor but the para-professional status remained. At home simple household tasks such as cleaning were replaced by domestic errands such as shopping and other consumption based tasks. Therefore, even though the domestic environment itself became more manageable, the duties of the housewife expanded beyond the walls of the home.

The house itself is a built reflection of culture. Historically, each ??? creates surroundings that are related to one another in a way that perpetuates certain sex-stereotypes. The new feminist focus today goes beyond domestic work spaces. "Architecture and urban planning have orchestrated the separation between women and men, private and public, home and paid employment, consumption and production, reproduction and production, suburb and city" (p. 110).

The element of control threads its way through all of the areas of the environment we build. Appropriately then, Michel Foucault's discussion of Bentham's panopticon creates a startling but relevant image for the reader.

Wajcman shows that like the panopticon the structure of the building ensures that control is largely achieved through self-discipline. That women are bound by certain forms in the public and private sphere is obvious. Personal observations of office size proved for men vs. women is one such example. Homes built rationally for efficiency rather than creatively for security is another. To employ technological means in our environment is impossible if patriarchal attitudes continue to dominate all areas of life. Without a change in attitude the route to architectural change that liberates and frees the life of women is forever blocked.

Although Arnold Pacy's *The Culture of Technology* is mentioned only briefly, his influence is seen throughout Wajcman's book. Culture is often the concern of feminist politics, and both Wajcman and Pacy are concerned with several areas of oppression. The struggle over the definition of technology in order to see its non-neutral dimensions are beginning to come to light. Both Wajcman and Pacy do not limit technology to objects or artifacts. Instead they see the technological enterprise as a human activity with cultural dimensions. And only when we grasp this broader definition can beliefs about expertise and the definitive bounds we form for our societal existence be changed to allow for equal empowerment. As for future technologies, the way to change our current means of developing and utilizing technologies requires a change in values along with a change in technologies themselves.

Technology is value laden. Beliefs about progress, resources and expertise keep feminine values from being successful and valued. Beyond a call for new values must come an awareness that with modernization, new does not necessarily mean improved. If we hope to find a way to de-gender technology, the underlying masculine drive for power and expertise must allow for the feminine needs for harmony and creativity to balance out the one-sided assumptions that traditionally have formed our technological world.

Wajcman helps us see that gender is indeed one of many areas where accepted oppressive technologies and the monopolies that sustain them are present. Looking at our technological environment, and changing our values to increase the involvement of the oppressed, brings us to a more enlightened society where we may hope to move forward into a more balanced technological era.