and state patrons." In an outstanding book published earlier this year, *Earth for Sale*, Brian Tokar, a faculty member at Goddard College and the Institute for Social Ecology, focused on another aspect of ecology and politics missing from Karliner's analysis, the "institutionalization of mainstream environmentalism." Indicting mainstream environmental groups for selling out, Tokar examines the environmental movement's internal and political maneuvers. For instance, the Sierra Club leadership, not wanting to sacrifice its cozy relationship with Clintonian environmentalism, would never have opposed NAFTA or supported a ban on commercial logging in national forests had it not been forced to do so by its insurgent ranks.

As Tokar sees it, "mainstream environmentalists—with their unbroken faith in the political process, their illusions of access to power, and their commitment to a discredited and ill-defined political 'center'—have rendered themselves largely irrelevant to this emerging discussion." Through their successes in raising awareness of environmental issues, these organizations have inadvertently acted as the advance team for corporate advertising flacks. Not that they put up much of a fight: Budgets of the ten largest environmental organizations have grown from less than $10 million in 1965 to more than $500 million in 1990, with some of the worst environmental offenders helping to bankroll the cause. When it is near-heresy to accuse of irresponsible behavior the very corporations who have bought a seat at the green table and certainly heresy to indict the system that cows us into receiving them, to reject their generous offers of help seems fuzzy-headed only to those not sobered by scholars and activists like Karliner, Dauvergne and Tokar. The environmental movement now finds itself in the ironic situation of trying to maintain a sort of green center by out-lobbying the corporations. (Notice how slickly DeSimone and Popoff suggest getting rid of environmental regulations.) Corporate calls for self-regulation and appeals for their own brands of economic and environmental practicality corner the enviros politically, making unspeakable compromises look better than the unthinkable alternatives.

Taken together, the Karliner, Dauvergne and Tokar books offer an antidote to the noxious swill and point to ways out of this corner: Dauvergne encourages us to look beyond the actions of transnational corporations to solve unsustainability in our economic systems; Tokar sees a renewed ecological movement emerging from networks of grass-roots activists united by a more holistic approach to social ills; and Karliner calls for local, national and global democratization through "grassroots globalization" that works for institutional change. Without such sweeping changes, it could be the last call for the environmental movement. ■

Girl Geeks

LINDSY VAN GELDER

ZEROS + ONES: Digital Women + the New Technoculture.
By Sadie Plant. Doubleday. 305 pp. $23.95.

It's hard not to be bewitched by a book about the digital revolution whose very first sentence plunges us back through the eons and into the primordial soup: "Those were the days, when we were all at sea. It seems like yesterday to me. Species, sex, race, class: in those days none of this meant anything at all. No parents, no children, just ourselves, strings of inseparable sisters, warm and wet, indistinguishable one from the other, gloriously indiscriminate, promiscuous and fused."

Despite the ubiquity of technology in our lives, few writers have successfully spanned the split between the "two cultures" of science and the humanities that C.P. Snow warned about in the fifties. Sherry Turkle of M.I.T. has written several excellent books on the transformative impact of the computer on human identity; there have also been some very good fictional works about such topics as artificial intelligence (Richard Powers's *Galatea 2.2*) and virtual reality (Neal Stephenson's *Snow Crash*). Sadie Plant, a 33-year-old British cultural studies scholar, clearly wants to bridge Snow's famous gap once and for all, and even to prove that the gap itself is an illusion. The bibliography of *Zeros + Ones* includes dozens of thinkers one doesn't usually imagine bellying up to the counter at the digital deli: Foucault, Lacan, Freud, Cocteau, Fernand Braudel, Margaret Atwood, Camille Paglia, William Burroughs, Luce Irigaray, Susie Bright.

Plant is often called a "cyberfeminist." I suppose I'm one, too. I bought my first personal computer in early 1982 and went online the following year. In those days, owning such a system meant having to learn a great deal about its innards. Like most writers, I recycle my brain input, and I was soon working regularly for the then-emerging computer magazines. Because I was also a contributing editor at *Ms.*, I quickly became conspicuous as that oddity, a girl geek. I still get calls from journalists who want to know What Can Be Done to help women and girls get over "technophobia." My answers have grown testier over the years. These days I usually say that women should use computers for the same reason that they should use telephones and cars, but that the culture of computing is pretty much a done deal. Its priorities were set long ago by male hackers, C.E.O.s and Nintendo players.

Plant also sidesteps the matter of What Can Be Done, but her reasons are far more optimistic than mine. In a neural net-shell, she argues that women are especially attuned to the webs and wires of modern technology—through their biology, history, sexuality and culture: "The roundabout, circuitous connections with which women have always been associated and the informal networking at which they have excelled now become protocols for everyone." The female is the quintessential postmodern human.

This thesis is not presented in anything resembling a logical, linear narrative. *Zeros + Ones* is an associative pastiche of facts, quotes, character sketches, theories, riffs and asides; reading it is a little like surfing the Web. Because the book also presumes a basic grounding in computer science (and genetics, and quantum mechanics, and biochemistry), Plant's natural audience is probably the reader who has already stuck a few toes in the ocean dividing the "two cultures."

Her most accessible—and least interesting—argument is that women have been preparing for the computer through the ages. As weavers, women created multimedia: "singing, chanting, telling stories, dancing, and playing games as they work, spinsters, weavers, and needleworkers were literally networkers as well.... the textures of woven cloth functioned as means of communication and information storage

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long before anything was written down." More recently, pink- and blue-collar women "spent their time making lists, detailing procedures, typing, sorting, coding, folding, switching, transmitting, receiving, wrapping, packaging, licking the envelopes, fingers in the till," flicking the phone wires à la Ernestine and assembling motherboards. But does soldering chips in a Taiwanese factory mean diddly squat, really? By such logic, slaves toiling in the cotton fields were actually readying themselves for the Seventh Avenue fashion industry. One aches here for Plant to address such pedestrian matters as, say, What Can Be Done about women's relative scarcity in high-tech management.

Romping through *Zeros + Ones* is a *Ragtime*-like collection of mostly female or gay historical figures, including Mary Shelley, Alan Turing, Leonardo da Vinci and Anna Freud. All contributed to a blurring of such binary pairs as zeros and ones, vaginas and penises, life and death, sanity and madness, science and the humanities. The recurring presence in the book is Lady Ada Lovelace, the mathematician known as the world's first software programmer (even though her software was too advanced for the hardware of the time). Plant quotes Lovelace musing to herself in the footnotes of her translation of an engineering treatise: "All, and everything is naturally related and interconnected. A volume I could write on this subject."

That was in 1842, when Lovelace was 26. Ten years later she was dead of what sounds like uterine cancer and what was then commonly diagnosed as "hysteria," a condition of both the womb and the spirit. Physicians going back to the Greeks had supposed its physical cause was literally an unmoored, wandering womb. By Lovelace's day, the presenting symptom was an unhinged personality of the mad housewife type. "Ada was by turns sociable and reclusive, cautious and reckless, swinging between megalomaniac delight in her own brilliance and terrible losses of self-esteem," according to Plant. "There had been times when she had almost given in to the fashionable belief that overexertion of the intellect lay at the root of her hysteria. At one point she wrote, '*Many causes* have contributed to produce the past derangements; & I shall in future avoid them. One ingredient...has been *too much Mathematics*.'" Lovelace believed her brain was "something more than merely *mortal*; as time will show." But she also worried about being scatterbrained, having the kind of intelligence that has trouble focusing "CONTINUOUS attention to any subject whatever."

Many chapters later, in a discussion of expert systems, parallel processing and the Internet, Plant clicks out one of her typical imaginative links:

> Neural nets have less to do with the rigors of orthodox logic than the intuitive leaps and cross-connections once pathologized [as] hysteria.... [They] function as parallel distributed processors in which multiple interconnected units operate simultaneously without being bound to some organizing point. These are also nervous systems: highly strung, volatile, easily excited, and oversensitive. Hysterics are not the only scatterbrains.

Like the schizophrenics in Doris Lessing's *The Four-Gated City*, Plant's nineteenth-century hysterics are really women on the verge of a nervous breakthrough.

Ultimately Plant considers women to be among the many systems that evolve and thrive, even in reaction to attempts to suppress them. Viruses mutate in the face of antibiotics; software, once the dumb handmaiden of programmers, now re-invents itself as self-replicating neural worms; women rise up and become uppity feminists and lesbians.

Female sexuality is about merger, in Plant's view. Once again, sisterhood is digital, since the impulse to transcend the boundaries of the body is a template for life online. The world of the modem "facilitates unprecedented levels of spontaneous affection, intimacy, and informality, exposing the extent to which older media, especially what continues to be called 'real life,' come complete with a welter of inhibitions, barriers and obstacles sidestepped by the packet-switching systems of the Net. Face-to-face communication—the missionary position so beloved of Western man—is not at all the most direct of all possible ways to communicate." Plant was quoted in a 1995 online interview advocating something called "post-human porn" that gets beyond "tits and bums and organs...bacterial sex, for example." The Net levels the foreplaying field for women, just like the good old days in the microbial swamp.

Some readers will be irritated by Plant's assumptions that female equals fluid, connected and multitasking. Others may be put off by a certain juxtapositional glibness. She is forever taking two concepts (like hysteria and neural nets) or similar quotes by unrelated historical figures (like Turing on the mimicry of computers and Irigaray on the mimicry of women under patriarchy), plunking them down next to each other and then standing back and waiting for the reader to go "Ahhh!" Fortunately, one *does* go "Ahhh!" often enough to make *Zeros + Ones* an intriguing read. ■