

MARCIA BRAUNDY

READER'S RESPONSE TO SADIE PLANT'S *ZEROS + ONES: DIGITAL WOMEN + THE NEW TECHNOCULTURE*

Sadie Plant, in *Zeros + ones: Digital women + the new technoculture*, draws from the widest possible range of disciplines— from history and psychoanalysis to engineering, from mechanics and weaving to communication theory. She takes us on a journey to earthly places as well as spaces of the mind, heart and soul. The threads of metaphors throughout the book ensure that we engage with the material on many levels. Weaving as a metaphor, for example, is used in a myriad of ways. Weaving with thread, with thoughts, with cards, with images, with voices, with fibre optics, with ways of thinking and inventing. Without damaging egos, she enlarges our view of where and how, and why and what needs to be considered and included as contributions from both women and men to our technological adventures. Threaded throughout the book are stories and journal entries of Ada Byron Lovelace, who, a "hundred years before the hardware had been built... produced the first example of what was later called computer programming" (p. 1). There is a continual flow of thought-provoking quotations from a wide variety of sources that enrich, exhaust and amaze the reader. Plant shows us how Ada's visions, imagination and ideas laid down in words, project the future we live in today more clearly than anyone of her time, or maybe our own. "Any such development, she writes, will have various collateral influences, besides the main and primary object attained" (p. 21).

With few words, Plant demonstrates Freud's misogyny, again using the weaving metaphor so well embedded in her text, while at the same time promoting the innovations of invention developed by his daughter, Anna. Rather than following simplistic logical progressions of reasoning, cause and effect, the notion of complexity is introduced. "Only by 'criss-crossing the complex topical landscape' can the 'twin goals of highlighting multifacetedness and establishing multiple connections' even begin to be attained" (p. 11). The hysteria of the time was well documented in the doctor's analysis of Ada's need for "peculiar & artificial excitements" (p. 21), as she pursued her search for inventive meaning on a journey that, today, looks much like Hypertext.

Plant's succinct and poetic description of historic socially constructed gender roles is quickly contrasted with the reality of women's actual activities in the creation of digital machines. It forces a smile as I imagine the dedication with which these women pursued their interests.

Genderquake

A "Genderquake" was created by computers as they were introduced into every industry, and almost overnight altered the physical, mental and communication requirements of work in nearly every economic sector.

In the West, the decline of heavy industry, the automation of manufacturing, the emergence of the service sector, and the rise of a vast range of new manufacturing and information-processing industries have combined to reduce the importance of the muscular strength and hormonal energies which were once given such high economic rewards. In their place come demands for speed, intelligence, and transferable, interpersonal, and communication skills. At the same time, all the structures, ladders, and securities with which careers and particular jobs once came equipped have been subsumed by patterns of part-time and discontinuous work which privilege independence, flexibility, and adaptability. These tendencies have affected skilled, unskilled, and professional workers alike. And since the bulk of the old full-time, lifelong workforce was until recently male, it is men who have found themselves most disturbed and disrupted by these shifts, and by the same token, women who benefit. (pp. 38-39)

Talents nurtured in the multifaceted roles of family infrastructure, including working women, mother and homemaker, trouble-shooter and problem-solver became the prerequisites for surviving in the new economy. Flexibility and adaptability were not skills honed in technical blue-collar environments. Men are at a loss, violence against women is up and religious fundamentalists are creating a backlash all over the world. The images of "machines [that] multiply [and] push them little by little beyond the limits of the their nature" (p. 39) strike to the heart of the matter, and women have received the brunt of the frustration created by the loss of a locus of control over technology, as the free flow of information runs amok.

And what of the women who have been locked out of practicing the construction crafts claimed by men? We become the new witches, to be sought out and burned or drowned, the "virtual aliens." Capitalist or Marxist, the male production model is the one that is the default.

It has long been assumed in the Western World that technologies are basically tools, means to ends decided in advance by those who make them and put them to use. Whatever the particular purposes for which they are designed and employed, the overriding rationale has always been the effort to secure and extend the powers of those who interests they are supposed to serve. And their interests have in turn been defined as the exercise of control over something variously defined as nature, the

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natural, the rest of the world. This crude model of the user and the used has legitimized the scientific projects, colonial adventure, sexual relations, and even the artistic endeavors of the modern world. It continues to inform the deployment of even the most complex machines. (p. 77)

Interestingly, in this age of "people being replaced by technology," it is women who have adapted to the new workstyles most easily. Women have been playing the many roles that prepared them for the flexibility required by new office and employment practices. As technologies reproduced themselves and developed beyond their inventors' directions, many blue-collar jobs were being replaced. It is here, at the intersection of the genderquake, skills, and training that *Zeros + ones* is most informative for education. Imagining and recognizing the implications of technologies and the practices they engender, as educators, we may be better able to foster innovation and invention that serves the needs of the whole society.

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