

## Instruments of Isolation

**Technology and Women's Voices.** Keeping in Touch. CHERIS KRAMARAE, Ed. Routledge and Kegan Paul (Methuen), New York, 1988. xii, 246 pp., illus. Paper, \$13.95.

*Technology and Women's Voices: Keeping in Touch* is a collection of papers exploring the effect of technology on women's communication, primarily in the United States but also in Great Britain and Canada. More than the obvious communication technologies (telephones, typewriters, computers, print) are covered in this imaginative collection, and Cheris Kramarae maintains that all technological systems can be seen as communication systems. Washing machines, sewing machines, and dishwashers, automobiles and mass transit, microphones, and electricity are examined for their impact on women's ability to interact with each other and the world at large.

The term "voices" in the title is construed variously by the authors, interpretations ranging from a Carol Gilligan-influenced use of "voice" to convey gender-identity in a study of how women and men interact with computers differently, to a treatment of technology as language, to a truly physiological definition in a paper on women's voices and microphones.

Though the concept of "voices" may not serve as a wholly cogent unifying theme, there is another, more powerful theme: each author provides a feminist critique of the technological status quo as ignoring women's real needs or exploiting women as workers, both inside and outside the home. Kramarae notes that social hierarchies have remained remarkably consistent since the industrial revolution and that seemingly revolutionary technologies are actually very conservative because they have done little to dismantle such hierarchies.

Nevertheless, this is not an anti-technology tract. As Margery Davies acknowledges, "Throwing all the typewriters out the window . . . would not in and of itself change women's subordinate position in the office." Davies demonstrates how capitalist expansion—not the invention of the typewriter—drew women into the office work force, and she reminds us that "it is people who decide how to organize work. The machines only make it possible for owners and managers to hide their decisions behind the so-called 'technological imperatives' of certain office equipment."

Throughout, the authors focus on social relations to understand why technology has failed to empower women. Victoria Leto points out that "labor-saving" devices did not free women from housework because standards of cleanliness were raised and the sexual division of labor still relegates housework to women. Lana F. Rakow and Virginia J. Scharff observe that telephones and automobiles, respectively, could have helped overcome the isolation of housewives (and arguably did for farm women) but that in reality phones and cars reinforced isolation by allowing suburbia to develop in the first place.

Women's isolation is the flip side of the subtitle "Keeping in Touch," and numerous examples are cited of increased isolation as a side effect of technological progress. Leto describes how washing machines in private homes ultimately replaced washing in such outdoor social settings as river banks or in backyards or on porches within talking distance of neighbors. A dichotomy between public-outdoor and private-indoor is also found in Leanne Hinton's study of the effect of electricity on oral tradition among the



"Collecting book donations to be sent to World War I soldiers. Women speaking loudly in public during World War I seem to have been well accepted when it was in support of the war effort." [From A. McKay's paper in *Technology and Women's Voices*; National Archives]

Havasupali tribe, who live on a remote reservation. Electricity allowed families to remain indoors, cutting back on the informal visits between neighbors that had been a forum for exchanging folklore, particularly women's songs and legends. Kramarae and Anne Machung offer other instances of technology narrowing women's social circle—the sewing machine edged out quilting bees, and intensive data-entry on computers has curtailed office sociability.

Transportation is a critical link between the public world of the marketplace and the private world of the home. "The Women and Transport Forum" asserts that for many women physical mobility is still a precondition of communication, yet women generally have less access to transportation. In Great Britain, where only one-third of women have driver's licenses, women (particularly older women, mothers of young children, part-time workers, and poor, minority, and handicapped women) are not well served by a mass transport system designed by affluent white men who have limited knowledge of the lives of women. As in the United States, greater resources are invested in highways for privately owned automobiles than in the development of public transportation.

"Dashed Hopes" could have been the subtitle of this collection because so many potentially revolutionary technologies have failed to live up to their liberating potential. However, many of the authors offer alternative visions of technology and social relations that could improve the lot of women. Judy Smith and Ellen Balka advocate the use of Sex-Role Impact Statements (similar to Environmental Impact Statements), which would consider such questions about technological change as: Would it broaden or restrict women's traditional options? Would it increase or limit women's chances for economic self-sufficiency? Would it reduce or increase women's privatization in the home?

Many of the authors call for greater involvement of women in policy-making about technology. Smith and Balka note that women must become "techno-literate" to participate in decision-making about science and technology. Their own experiences using feminist computer networks to share information and organize politically is in direct contrast to that of VDT operators who have virtually no control over their work process. Sherry Turkle, in her intriguing work on women's relationship to computers, predicts that women may develop a more creative programming "style" than male "hacker culture."

The material presented in this collection is generally well-researched. Mark Schulman's historical overview of women and print

technology raises provocative questions about women as consumers, distributors, producers, and creators of print, but his theoretical discussion of feminism, Marxism, and neo-McLuhanism is sketchy and obscure. Anne McKay has unearthed fascinating material on women's early use of microphones for public speaking as well as women on radio, but her paper is flawed by some specious historical reasoning and vague conclusions about the actual impact of microphones on women's public roles and achievement. Leto's review of the literature on household technology fails to mention the work of Joann Vanek, whose "Time spent in housework" (*Scientific American*, November 1974) turned the conventional wisdom about women being liberated from housework on its head. (Leto also cites another leading scholar of housework, Ruth Schwartz Cowan, incorrectly as Ann Cowan.)

Scrutinizing communications and technology from the perspective of women can yield illuminating insights. Lana F. Rakow's very original study of the telephone explores new angles on this much-studied communication technology. Obscene phone calls, cultural stereotypes of females gossiping on the phone or forlorn women waiting for men to call, and the social etiquette that has dictated who (men) may call whom (women) are among the topics Rakow considers. Such subjects have not been covered in traditional studies of communication technology because, Kramarae contends, "Western history of technology has been basically men's history." This volume contributes to a fuller understanding of the history of technology by exploring women's unique experiences with technology.

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## South Sea Waters

**Ecology of Tropical Oceans.** ALAN R. LONGHURST and DANIEL PAULY. Academic Press, Orlando, FL, 1987. xiv, 407 pp., illus. \$39.95. International Center for Living Aquatic Resources Management Contribution no. 389.

*Ecology of Tropical Oceans* is unique in its scope. The tropical oceans occupy almost 50 percent of the total area of all open water and 30 percent of the total area of continental shelves. Yet these areas receive scant or cursory treatment in most textbooks. Perhaps in part this is because so few universities or research institutes are based in the tropics. It is not for lack of publications per se. This book includes almost 800 references. Perhaps the lack of general attention

is due to the fact that much of the research has been published in the "gray" literature. No matter how excellent such work or how accessible, it is often ignored or dismissed simply because it does not appear in a "respectable" journal.

This book serves as a comprehensive general introduction to the ecology of tropical oceans, including chapters on geography and geomorphology, physical oceanography (a particularly useful introduction for the ecologist), biological communities, ecosystem trophodynamics, and the population biology of large marine invertebrates (urchins, penaeid shrimps, and squids). The focus, however, is always on the ecology of tropical fishes.

Longhurst and Pauly are both ultimately concerned with improving the management of tropical fisheries. They have rightly perceived that a major impediment to the effective management of tropical fishes is a general lack of knowledge of their life histories and environment. Hence their aim to provide "a simple but comprehensive examination of what is currently known about the structure of all tropical marine habitats and how fish can make a living in them under natural conditions."

Tropical seas are diverse in their environments and community types as well as species. This diversity is reflected in the vast numbers of examples given in the book, detail that may distract readers unfamiliar with the tropics but that is highly stimulating to tropical workers used to battling with North Sea or Northwest Atlantic species in other works. Many of the examples will be new to general reader and specialist alike. Others involve useful reanalysis of information published outside the mainstream literature or of previously unpublished data.

From among this detail the authors have made a valiant attempt to create a synthesis and search for generalizations. Since most theory and experience of fisheries management have come from the higher latitudes, comparisons between tropical and non-tropical systems are inevitable, but such general comparisons would be fatuous if generalizations could not be made within the tropics. Though many may not agree with the authors' final classifications, these provide the stimulation and basis for further studies.

Traditionally tropical environments have been seen as characterized by temporal stability, but a recurring theme throughout this book is the temporal variability of tropical seas. This variability is ascribed primarily to tropical hurricanes or cyclones, meso-scale oceanographic events, seasonal wind patterns and rainfall, and ENSO (El Niño/Southern Oscillation) events. It is suggested that inter-annual variability in particular is

considerable in the marine tropics, mediated by ENSO events on the global scale and by regional rainfall patterns and stochastic oceanic circulation at the local scale. Among other data presented, previously unpublished analysis of long-term data sets for catches of two pelagic tropical fishes clearly demonstrates major inter-annual variability in tropical stocks.

Dogmas derived from a belief in intra-annual stability of tropical seas—that tropical fishes do not generally show annual bands on hard parts and therefore cannot be aged in this way, that spawning in the tropics is continuous and therefore analysis of the growth of tropical fishes cannot be achieved by length-frequency analysis, and that tropical fishes do not exhibit seasonal variations in growth rate—are all refuted in a typically provocative chapter by Pauly on the dynamics of tropical fish populations. This considerable section of the book is the presentation of a single metabolic model to describe reproduction, growth, and mortality of fishes in general, based on Pauly's belief that fish growth is limited primarily by the amount of oxygen supplied through the gills and the body surfaces. The following chapter examines the applicability of the same model to some large, motile invertebrates.

Overall, *Ecology of Tropical Oceans* is unique, stimulating and provocative. It is a major contribution to tropical marine science and will be of interest to marine ecologists and fish biologists in general. Most important, the book provides an environmental background and entree into the literature that will stimulate research relevant to the management of tropical fisheries for many years to come.

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## The Radio Universe

**Galactic and Extragalactic Radio Astronomy.** G. L. VERSCHUUR and K. I. KELLERMANN, Eds. Second edition. Springer-Verlag, New York, 1988. xxii, 694 pp., illus. \$79.95. Astronomy and Astrophysics Library.

There are several publications that survey the broad field of optical astronomy for the beginning graduate student, but few for one who wishes to learn about the radio universe. The first edition of *Galactic and Extragalactic Radio Astronomy*, edited by G. L. Verschuur and K. I. Kellermann, was a welcome arrival when it appeared in 1974, and most radio astronomers own a copy. The second edition, with the same editors, is