

- Schelling, T. C. (1978). *Micromotives and macrobehavior*. New York: W. W. Norton .
- SCIENCEnet Subscribers/Catalog of Services (1988, Fall). Omnet, Inc., 137 Tonawanda Street, Boston, MA 02124.
- Selmi, P. M. (1983). *Computer-assisted cognitive-behavior therapy in the treatment of depression*. Unpublished doctoral dissertation, Illinois Institute of Technology.
- Servan-Schreiber, D., and Binik, Y. M. (1989). Extending the intelligent tutoring system paradigm: Sex therapy as intelligent tutoring. *Computers in Human Behavior*, 5, 241-259.
- Shapiro, N. Z., and Anderson, R. H. (1985). *Toward an ethics and etiquette for electronic mail*. Santa Monica, CA: The Rand Corporation.
- Sharpe, L. (1952). Steel axes for stone age Australians. In E. H. Spicer (Ed.), *Human problems in technological change* (pp. 69-90). New York: Russell Sage Foundation.
- Sheil, B. A. (1983). Coping with complexity. *Office: Technology and People*, 1, 295-320.
- Shneiderman, B. (1987). *Designing the user interface: Strategies for effective human-computer interaction*. Reading, MA: Addison Wesley.
- Short, J., Williams, E., and Christie, B. (1976). *The social psychology of telecommunications*. London: Wiley.
- Siegel, J., Dubrovsky, V., Kiesler, S., and McGuire, T. (1986). Group processes in computer-mediated communication. *Organizational Behavior and Human Decision Processes*, 37, 157-187.
- Simon, H. A. (1973). Applying information technology to organization design. *Public Administration Review*, 33, 268-278.
- Sinaiko, H. W. (1963). *Teleconferencing: Preliminary experiments* (Research paper P-108). Arlington, VA: Institute for Defense Analysis.
- Sitkin, S. B. (forthcoming). Secrecy norms in organizational settings. In L. D. Browning (Ed.), *Conceptual frontiers in organizational communication*. Albany: State University of New York Press.
- Smith, D. K., and R. C. Alexander (1988). *Fumbling the future: How Xerox invented, then ignored, the first personal computer*. New York: William Morrow and Company.
- Sproull, L. S. (1983). The nature of managerial attention. In P. Larkey and L. Sproull (Eds.), *Advances in information processing in organizations*, 1, 9-27. Greenwich, CT: JAI Press
- Sproull, L., and Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science*, 32(11), 1492-1512.
- Stasz, C., and Bikson, T. K. (1989). *Computer-supported cooperative work: Examples and issues in one federal agency*. Santa Monica, CA: Rand Corporation .
- Steele, G. (1984). *Common LISP, the language*. Bedford, MA: Digital Press.

- Steele, G. L. (1983). *The hacker's dictionary*. New York: Harper & Row.
- Stilgoe, J. R. (1983). *Metropolitan corridor: Railroads and the American scene*. New Haven: Yale University Press.
- Stohl, C., and Redding, W. C. (1987). Messages and message exchange processes. In F. M. Jablin (Ed.), *Handbook of organizational communication* (pp. 451-502). Newbury Park, CA: Sage.
- Stoll, C. (1989). *The cuckoo's egg*. Garden City, N.Y.: Doubleday.
- Strassman, P. A. (1985). *Information payoff: The transformation of work in the electronic age*. New York: Free Press.
- Strodtbeck, F. L., and Lipinski, R. M. (1985). Becoming first among equals: Moral considerations in jury foreman selection. *Journal of Personality and Social Psychology*, 49(4), 927-936.
- Suchman, L. A. (1988). *Plans and situated actions*. Norwood, NJ: Ablex Publishing.
- Sudman, S., and Bradburn, N. N. (1974). *Response effects in surveys*. Chicago: Aldine.
- Sundstrom, E., and Sundstrom, M. G. (1986). *Workplaces: The psychology of the physical environment in offices and factories*. Cambridge: Cambridge University Press.
- Synodinos, N. E., and Brennan, J. M. (1988). Computer interactive interviewing in survey research. *Psychology and marketing* (pp. 117-137). New York: John Wiley and Sons, Inc.
- Tamuz, M. (1987). The impact of computer surveillance on air safety reporting. *Columbia Journal of World Business* (Spring), 69-77.
- Thoits, P. (1983). Multiple identities and psychological well-being. *American Sociological Review*, 48, 174-187.
- Thomas, J., and Carroll, J. (1981). Human factors in communication. *IBM Systems Journal*, 20, 237-263.
- Thompson, J. D. (1967). *Organizations in action*. New York: McGraw-Hill.
- Thompson, S. (1981). Will it hurt less if I can control it? A complex answer to a simple question. *Psychological Bulletin*, 90, 89-101.
- Thorn, B. K., and Connolly, T. (1987). Discretionary databases: A theory and some experimental findings. *Communication Research*, 14(5), 512-528.
- Thorngate, W. (1988). On paying attention. In W. Baker, L. Mos, H. Van Rappard, and H. Stam (Eds.), *Recent trends in theoretical psychology* (pp. 247-264). New York: Springer-Verlag.
- Travis, P. (1990, January). Why the AT&T network crashed. *Telephony*, 11.
- Trevino, L. K., Lengel, R., and Daft, R. L. (1987). Media symbolism, media richness, and media choice in organizations: A symbolic interactionist perspective. *Communication Research*, 14(5), 553-574.
- Treybig, J. G. (1985). The take-off company: Self-management and flexible structure. In R. W. Smilor and R. L. Kuhn (Eds.), *Managing take-off in fast growth companies* (pp. 3-18). New York: Praeger.

- Turner, J. A. (1984). Computer-mediated work: The interplay between technology and structured jobs. *Communications of the ACM*, 27(12), 1210-1217.
- Tushman, M. L. (1977). Special boundary roles in the innovation process. *Administrative Science Quarterly*, 22(4), 587-605.
- Tushman, M. L., and Anderson, P. (1986). Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31, 439-465.
- Uhlig, R. D., Farber, D., and Bair, J. H. (1979). *The office-of-the-future: Communications and computers*. Amsterdam: North-Holland Publishers.
- Vogel, D. R., and Nunamaker, J. F. (1990). Design and assessment of a group decision support system. In J. Galegher, R. E. Kraut, and C. Egido (Eds.), *Intellectual teamwork: Social and technological foundations of cooperative work* (pp. 511-528). Hillsdale, NJ: Erlbaum.
- Von Hippel, E. (1987). Cooperation between rivals: Informal know-how trading. *Research Policy*, 16, 291-302.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Vroom, V. H., and Yetton, P. W. (1973). *Leadership and decision making*. Pittsburgh: University of Pittsburgh Press.
- Wagman, M. (1980). PLATO DCS: An interactive computer system for personal counseling. *Journal of Counseling Psychology*, 27, 16-30.
- Wasby, S. (1989). Technology in appellate courts: The ninth circuit's experience with electronic mail. *Judicature*, 73, 90-97.
- Waterton, J. J., and Duffy, J. C. (1984). A comparison of computer interviewing techniques and traditional methods in the collection of self-report alcohol consumption data in a field study. *International Statistical Review*, 52, 173-182.
- Weick, K. E. (1979). *The social psychology of organizing*. Reading, MA: Addison Wesley.
- Weick, K. E. (1976). Educational organizations as loosely-coupled systems. *Administrative Science Quarterly*, 21, 1-19.
- Weiner, S. L., and Goodenough, D. R. (1977). A move toward a psychology of conversation. In R. O. Freedle (Ed.), *Discourse production and comprehension* (pp. 213-255). Norwood, NJ: Ablex.
- Weisband, S. P. (1989). *Discussion, advocacy and computer-mediated communication effects in group decision making*. Unpublished doctoral dissertation, Carnegie Mellon University.
- Weisband, S. P. (in press). Group discussion and first advocacy effects in computer-mediated and face-to-face decision making groups. *Organizational Behavior and Human Decision Processes*.
- Weizenbaum, J. (1976). *Computer power and human reason*. San Francisco: Freeman.
- Whisler, T. (1970). *The impact of computers on organizations*. New York: Praeger.
- White, L., Jr. (1962). *Medieval technology and social change*. London: Oxford University Press.

Williams, E. (1977). Experimental comparisons of face-to-face and mediated communication: A review. *Psychological Bulletin*, 84, 963-976.

Wright, J. P. (1979). *On a clear day you can see General Motors*. New York: Avon.

Yates, J. (1989). *Control through communication: The rise of system in American Management*. Baltimore: Johns Hopkins University Press.

Yates, J. (1982). From press book and pigeonhole to vertical filing: Revolution in storage and access systems for correspondence. *Journal of Business Communication*, Summer, 5-26.

Zigurs, I. (1987). *The effect of computer based support on influence attempts and patterns in small group decision-making*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis.

Zuboff, S. (1988). *In the age of the smart machine*. New York: Basic Books.

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