Networking

NETWORKING

Communicating with Bodies and Machines in the Nineteenth Century

Laura Otis

Ann Arbor

THE UNIVERSITY OF MICHIGAN PRESS

Copyright © by the University of Michigan 2001
All rights reserved
Published in the United States of America by
The University of Michigan Press
Manufactured in the United States of America
♾ Printed on acid-free paper

2004 2003 2002 2001 4 3 2 1

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in any form
or by any means, electronic, mechanical, or otherwise,
without the written permission of the publisher.

*A CIP catalog record for this book is available
from the British Library.*

Library of Congress Cataloging-in-Publication Data

Otis, Laura, 1961–
Networking : communicating with bodies and machines in the nineteenth century / Laura Otis.
p. cm. — (Studies in literature and science)
Includes bibliographical references and index.
ISBN 0-472-11213-9 (cloth : alk. paper)
1. Telecommunication—History—19th century. I. Title. II. Series.
TK5102.2 .O88 2001
302.2—dc21 2001002844

for Sander

Acknowledgments

Networking is appearing today thanks to the generosity of Hofstra University. Even though I had just taken a one-year leave to complete another book, Hofstra granted me a full-year sabbatical to investigate networks and nerves. This level of support for junior faculty research is almost unheard of, and I deeply appreciate Hofstra's ongoing enthusiasm for my work.

I performed almost all of the research for this book at the University of Chicago libraries, and I am deeply grateful to the people there who helped me locate sources. I am especially indebted to the librarians in Special Collections, who not only brought me good books but encouraged me with their enthusiasm for the project: Jay Satterfield, Krista Ovist, Barbara Gilbert, Jessica Westphal, and Debra Levine. I also did some valuable work at the Philadelphia College of Physicians, where Charles Greifenstein, Director of Historical Collections, continues to be a great help.

I would also like to thank all the members of the University of Chicago's British Romantic and Victorian workshop for their input on the project. I am especially grateful to Sam Baker, Saree Makdisi, Larry Rothfield, and William Weaver for their thoughts on nature vs. culture and to Laura Demanski for her valuable ideas on Henry James. I am particularly grateful, too, to Françoise Meltzer, who offered me a home in the University of Chicago Comparative Literature Program while I was researching and writing this book.

I would like to thank my colleagues this year at the *Max Planck Institut für Wissenschaftsgeschichte* in Berlin for their thoughts on the project: Cornelius Borck, Sven Dierig, Jean Paul Gaudillière, Hennig Schmidgen, Friedrich Steinle, and Ohad Parnes. I am especially grateful to Michael Hagner and Hans-Jörg Rheinberger for making a place for me at the Max Planck Institut and introducing me, as a fellow ex-scientist, to the realm of *Wissenschaftsgeschichte*. I appreciate the help I have received from the librarians at the Max Planck Institut, particularly Ellen Garske and Ulrike Burgdorf who located books and scanned the illustrations.

I am also indebted to the many scholars who have offered feedback on

this project at conferences, particularly Katherine Hayles, whose work has always been an inspiration; Jill Galvan; Timothy Lenoir; Richard Menke; Sid Perkowitz; and David Porush. Thanks to Susan Squier, Carol Colatrella, Hugh Crawford, and many others who have kept the Society for Literature and Science running, I have had wonderful opportunities to exchange ideas with other interdisciplinary scholars.

I owe my deepest gratitude for *Networking,* though, to Sander Gilman, my former advisor and now most supportive and inspiring friend. Thank you, Sander, for your endless help to a neurobiologist who wanted to study literature.

Quotations from Mark Twain's stories "Mental Telegraphy" and "From the London Times of 1904" are taken from *The Science Fiction of Mark Twain,* edited by David Ketterer. © 1984 David Ketterer (Hamden, Conn.: Archon Books/The Shoe String Press, Inc.) and are being reprinted by permission.

Contents

	Introduction	1
Chapter 1.	The Language of the Nerves	11
Chapter 2.	The Metaphoric Web	49
Chapter 3.	The Webs of *Middlemarch*	81
Chapter 4.	The Language of the Wires	120
Chapter 5.	Two Telegraphers Unhappy with Their Nerves	147
Chapter 6.	A Web without Wires	180
	Conclusion: Wired Thoughts	220
	Notes	227
	Bibliography	249
	Index	261