

This bibliography includes books from disciplines that collectively inform and define the study of new media as an inherently cross-disciplinary field: among these are seminal works on design, included within the larger rubric of visual thinking, as well as books on technology and practice, theory and criticism, time and motion, literary criticism and cultural studies, identity, cognition, science, history, ethics, interaction, information, and architectural theory.

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These subcategories are intended to break the complexity of this subject into smaller, more comprehensible components, and to define the multiple disciplines that contribute to the "multi" in multimedia. That said, the level of scholarship and degree to which design now informs a considerable amount of the writing on new media makes this a particularly difficult proposition. This bibliography is therefore intended for serious research on the purpose—and promise—of design within these media: the goal is to extend the scope of options, criteria, and ideas that circumscribe its potential contribution to this important field of study.

For designers struggling with how to visualize ideas in two-, three-, and four-dimensional space, the study of architectural theory provides an invaluable intellectual resource: the texts included in the category on digital spaces speak directly to this issue. Likewise, the relationship between form and content in an environment characterized by perpetual change raises important issues for designers: explorations of identity, examinations of human perception, and discussions of simple scientific phenomena are each included in an effort to illuminate the layered complexity of this issue. Equally complex, perhaps, are questions of ownership and authorship which continue to dominate the field of intellectual property in new media: with this in mind, a section on ethics has been included to address precisely such issues of timely importance to the study and practice of interaction design.

Finally, there has been a considerable amount of writing in recent years on the culture of new media, focusing on new options for interpersonal exchange, opportunities for human and computer-assisted interaction, and obstacles presented by increasingly complex information systems. Many of the texts included here also raise important issues about community, identity, and gender; about privacy, morality and humanity; about reading, writing, and thinking; and about reflection, expression and invention. To this end, the section on culture includes important works by a variety of scholars in different fields—from literary theory to artificial intelligence—who offer critical commentary on the multiple ways in which these new media have influenced the ways we think, work, and live.

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N-T

	cognition and perception	culture	digital spaces	ethics	history	identity	information	interaction	new narrative structures	practice	science	technology	theory and criticism	time and motion	visual thinking	
Narratives in Popular Culture, Media and Everyday Life									•							Berger, Arthur Asa
A Natural History of the Senses	•															Ackerman, Diane
Neuromancer									•							Gibson, William
New Media in the Information Superhighway												•				Pavlik, John V.
On Advertising						•										Ogilvy, David
On Dialogue		•														Bohm, David
The Optical Unconscious														•		Krauss, Rosalind
Orality and Literacy: The Technologizing of the Word									•							Ong, Walter J.
The Order of Things: An Archaeology of the Human...		•														Foucault, Michel
Out of Control: The Rise of Neo-Biological Civilization													•			Kelly, Kevin
Papers, Papiers													•			Greenaway, Peter
Paul Rand: A Designer's Art														•		Rand, Paul
Pioneers of Modern Design						•										Pevsner, Nikolaus
Poetics of Music														•		Stravinski, Igor
The Poetics of Space			•													Bachelard, Gaston
The Power of Place: How Our Surroundings Shape...			•													Gallagher, Winifred
The Primary Colors: Three Essays														•		Theroux, Alexander
Readings in Human-Computer Interaction: Toward the...								•								Baecker, Ronald
The Reconfigured Eye: Visual Truth in the...						•										Mitchell, William J.
Resisting the Virtual Life: The Culture and Politics of...		•														Brook, James
The Scientific Image: From Cave to Computer												•				Robin, Harry
The Secondary Colors														•		Theroux, Alexander
A Sense of Place, A Sense of Time			•													Jackson, John Brinckerhoff
Shared Minds: The New Technologies of Collaboration										•						Schrage, Michael
Shifting Gears: Technology, Literature, Culture in...						•										Ticchi, Cecilia
Silicon Snake Oil: Second Thoughts on the Information...												•				Stoll, Clifford
Six Essays on Design and New Media														•		Helfand, Jessica
Six Memos for the Millennium			•													Calvino, Italo
Small Is Beautiful										•						Schönmacher, Fred
The Society of Mind		•														Minsky, Marvin
Sounds														•		Kandinsky, Wassily
Structuralism and Since: From Levi-Strauss to Derrida														•		Sturrock, John
Technology and the Future													•			Teich, Albert
Technopoly: The Surrender of Culture to Technology													•			Postman, Neil
Theory of Film Practice									•							Burch, Noel
Tolstoy's Dictaphone			•													Birkerts, Sven
Trilogy: An Experiment in Multimedia									•							Capote, Truman
Trust: The Social Virtues and the Creation of Prosperity						•										Fukuyama, Francis
Tube of Plenty: The Evolution of American Television														•		Barnouw, E.
Turn Signals Are the Facial Expressions of Automobiles														•		Norman, Donald

U-W

	cognition and perception	culture	digital spaces	ethics	history	identity	information	interaction	new narrative structures	practice	science	technology	theory and criticism	time and motion	visual thinking	
Understanding Comics: The Invisible Art	•															McCloud, Scott
Understanding Media: The Extensions of Man		•														McLuhan, Marshall
Understanding Hypermedia													•			Cotton, Bob
Variations on a Theme Park: The New...				•												Sorkin, Michael
Virtual Communities			•													Rheingold, Howard
Virtual Reality			•													Rheingold, Howard
The Visual Display of Quantitative Information							•									Tufte, Edward R.
The War of Desire and Technology at the Close...						•										Stone, Allucquere Rosanne
War of the Worlds														•		Slouka, Mark
Where Wizards Stay Up Late: The Origins of...													•			Hafner, Katie
The Whole World is Watching: Mass Media in...		•														Gitlin, Todd
Who Owns Information? From Privacy to...				•												Branscomb, Anne Wells
Writing Space: The Computer, Hypertext and...									•							Bolter, David J.

Diane Ackerman, **A Natural History of the Senses**

London: Chapmans, 1990

A detailed analysis of the ways we use each of the senses, examined individually with lyric analogies and liberal anecdotes from the author's own experience.

Rudolf Arnheim, **Art and Visual Perception**

Berkeley, CA: University of California Press, 1954

Arnheim applies the principles of modern psychology to creating and looking at works of art. He is particularly curious about how the eye organizes visual material.

Gaston Bachelard, **The Poetics of Space**

Paris: Presses Universitaires de France

(translation ©1964 Orion Press), 1958

A consideration of how to "read" various kinds of perceptual space: spaces of intimacy and immediacy, imaginary spaces and legendary spaces including rooms, forests, shells, corners, and closets. Recommended reading for designers of virtual places.

Ronald Baecker, William Buxton, and Jonathan

Grudin, **Readings in Human-Computer Interaction: Toward the Year 2000**

San Francisco, CA: Morgan Kaufman Publishers, 1995

Combining key articles and case studies, this volume draws on research from graphic and industrial design, cognition and group process and presents important findings in the area of human-computer interaction.

Robin Baker, **Designing the Future**

London: Thames and Hudson, 1993

Baker looks at the transformations brought about by the computer, and explores, both conceptually and by way of practical example, how the design process is changing to address new and increasingly complex forms of visual expression.

E. Barnouw, **Tube of Plenty: The Evolution of American Television**

New York: Oxford University Press, 1975

The history and development of the television as an icon of American culture, viewed from a social and technical perspective.

Roland Barthes, **Mythologies**

New York: Hill and Wang, 1957

Fascinated with the meaning of words and objects, Barthes writes a beautiful series of essays about the metaphorical significance of events, dialogue, and common artifacts of everyday life.

Roland Barthes, **Image/Music/Text**

New York: Hill and Wang, 1964

A series of essays that discuss the structural analysis of narrative and issues in contemporary literary theory; the semiotics of photography and film; and the relationship of sound and music to the performer.

Michael Benedikt, ed., **Cyberspace:**

First Steps

Cambridge, MA: MIT Press, 1992

An often-quoted, comparatively early text on cyberculture. Benedikt, who depicts cyberspace as "the ultimate computer-human interface," discusses basic communication principles, and raises philosophical debates about interpersonal transactions in virtual space.

Arthur Asa Berger, **Narratives in Popular Culture, Media and Everyday Life**

San Francisco: San Francisco State University, 1996

Berger challenges readers to recognize narrative structures that influence the media and personal perceptions. He defines and examines narrative theory within the context of dreams, comics, television, novels, radio, film and everyday life.

Sven Birkerts, **The Gutenberg Elegies: The Fate of Reading in an Electronic Age**

New York: Ballantine Books, 1994

An impassioned plea on behalf of our "inner" lives, this is a thoughtful examination of the impact of technology on the experience of reading. Birkert's argument is a persuasive one precisely because it is so personal.

Sven Birkerts, ed., **Tolstoy's Dictaphone: Technology and The Muse**

Graywolf Press, 1996

An anthology of "conjectures embodied in experience" that collectively examines the coming of the electronic millennium, and its impact on our imperiled selves. Contributors include Sven Birkerts, Mark Slouka, and others.

Maragaret Boden, **The Creative Mind: Myths and Mechanisms**

New York: Basic Books, 1991

Seven essays that examine the nature of creativity within the context of cognitive, educational and computational psychology; the history and sociology of science; artificial intelligence and philosophy.

David Bohm and Lee Nichol, **On Dialogue**

London: Routledge Publishers, 1996

The authors look at the tension between person-to-person communication and global communication, examining its often conflicting cultural, psychological, and linguistic permutations. Recommended reading for designers trying to reach demographically varied audiences in networked environments.

David J. Bolter, **Writing Space: The Computer, Hypertext and the History of Writing**

New Jersey: Lawrence Erlbaum Publishers, 1991

A look at "hypertext" as a series of new opportunities for written expression, focusing on the ways interactive texts can engage the attention and active participation of the reader.

M. Christine Boyer, **Cybercities**

New York: Princeton Architectural Press, 1996

In her critique of the evangelism that characterizes technological innovation, Boyer argues that the computer is to contemporary culture what the machine was to modernism, and questions what Michael Sorkin has referred to as the "immaterial structures" shaping our cities.

Stewart Brand, **The Media Lab: Inventing the Future at MIT**

New York: Viking, 1987

A critical look at selected technological innovations and future-oriented programs developed at the MIT Media Lab.

Anne Wells Branscomb, **Who Owns Information? From Privacy to Public Access**

New York: Basic Books, 1994

A timely discussion of issues relating to security in digital communication transmission such as intellectual property rights, data protection, freedom of speech and privacy.

James Brook and Iain A. Boal, eds., **Resisting the Virtual Life: The Culture and Politics of Information**

San Francisco, CA: City Lights, 1995

From power to dependence, collaboration to isolation, these essays examine our human reactions to networked communication systems, and suggest strategies for resistance and reinvention.

Noel Burch, **Theory of Film Practice**

Princeton, NJ: Princeton University Press, 1969

This film studies classic offers intuitive and technical strategies for creating spatial and temporal relations, developing fictional and non-fictional subjects, and exploring the immersive structure of sound.

Italo Calvino, **Six Memos for the Millennium**

Cambridge, MA: Harvard University Press, 1990

Calvino cites five universal values critical for survival in the coming millennium: lightness, quickness, exactitude, visibility and multiplicity. An unwritten sixth essay on consistency was planned before his death.

Truman Capote, E. Perry, and F. Perry, **Trilogy: An Experiment in Multimedia**

New York: Collier Books, 1969

A comparatively early experiment in interactivity, this "trilogy" focuses on three stories, three people and three media: print,

television, and film. Looking at the influence of one media upon another, the editors experiment with simultaneous, multiple layers in this illustrated and unusual screenplay.

Aaron Copland, **Music and Imagination**

Cambridge, MA: Harvard University Press, 1952

Drawn from his Charles Eliot Norton Lectures at Harvard in 1951 and 1952, Copland offers insightful explanations of the creative process in music, breaking it down into its multiple component parts including (among others) listening, imagining and composing.

Bob Cotton and Richard Oliver, **Understanding Hypermedia**

London: Phaidon Press, 1993

An in-depth description of the history of the current media convergence, this book also explores the multiple component parts of multimedia: words, images, sounds, and movement through space and time.

Bob Cotton and Richard Oliver, **The Cyberspace Lexicon**

London: Phaidon Press Ltd., 1994

From arcade games to artificial intelligence, key concepts are clarified and jargon debunked. Includes over 800 alphabetized entries and supporting illustrations.

Nadine Covert, ed. with Vivian Wick, Elizabeth Scheines, and Teresa Russo, **Architecture on Screen: Films and Videos on Architecture, Landscape Architecture, Historic Preservation, City Regional Planning**

New York: Program for Art on Film, a joint venture of the Metropolitan Museum of Art and the J. Paul Getty Trust, 1993

A valuable visual reference book on architecturally-related films and film stills from 1927-1992 that includes 940 titles selected from 19,000 art and film archive sources. Selected films and stills focus on architecture and landscape design.

Mark Derr, **Escape Velocity: Cyberculture at the End of the Century**

New York: Grove Press, 1996

Derr characterizes contemporary culture as poised in the schism between "technological rapture" and "social rupture."

Jacques Derrida, Anne-Pascale Brault, and Michael Naas, **Memoirs of the Mind: The Self-Portrait and Other Ruins**

Chicago, IL: University of Chicago Press, 1993

Derrida explores issues such as vision, blindness and self-representation in this fully illustrated text with 22 color plates and 49 half-tones of prints and drawings he selected from the Louvre to illustrate these themes.

John Dewey, **Art as Experience**

New York: Capricorn Books, 1934

Based on Dewey's William James Lecture Series given at Harvard in 1932, these essays offer excellent insights on the function of perception, the meaning of civilization and the role of humanity in all the arts.

Peter Dormer, **Design Since 1945**

London: Thames and Hudson, 1993

Defining with great clarity the context within which designers work, Dormer surveys a wide range of post-war activity, including industrial and product design, graphics, furniture, and textiles.

Jon Dovey, ed., **Fractal Dreams: New Media in Social Context**

London: Lawrence and Wishart, 1996

Dovey focuses on the social aspects of digital communication. Looking closely at the impact of interactive multimedia and on society, he explores the emerging development of digital communities.

Timothy Druckrey, ed., **Iterations: The New Image**

Cambridge, MA: MIT Press, 1994

An exploration of new imaging systems that have changed the way our culture perceives itself and receives its information. Druckrey examines the impact of the computer on reshaping and redefining contemporary artistic form and production.

Timothy Druckrey, ed., **Electronic Culture: Technology and Visual Representation** New York: Aperture, 1996

A critical anthology of essays focusing on technology's radical impact on the visualization of artistic and scientific phenomena. According to Druckrey, we are entering a new phase in representation in which immersion and simulation have supplanted conventional models of perception and experience.

Sergei M. Eisenstein, **The Film Sense** London: Faber and Faber, 1943

A classic depiction of film as an expressive medium by this renowned director.

E.M. Forster, **The Machine Stops**

Oxford: Oxford and Cambridge Review, 1909
Obscure short story about the future of technology by the celebrated author of "A Room with A View." It focuses on an exaggerated relationship between a machine and its protagonists, and the imposed social estrangement that ensues.

Hal Foster, ed., **The Anti-Aesthetic: Essays on Postmodern Culture**

Port Townsend, WA: Bay Press, 1983
An anthology of critical essays focusing on the practice and theory of contemporary art. Special emphasis is placed on the postmodern break with modernism and corresponding rise of pluralism.

Michel Foucault, **The Order of Things: An Archaeology of the Human Sciences** New York: Vintage Books, 1970

Foucault breaks down restrictive conceptual frameworks in the humanities and sciences and develops a truly cross-disciplinary world view based on a network of analogies that transcend traditional proximities.

Francis Fukuyama, **Trust: The Social Virtues and the Creation of Prosperity** New York: The Free Press, 1995

The best-selling author of *The End of History* explains the social principles of economic life

and tells readers what they need to know to win the coming struggle for global economic dominance.

Winifred Gallagher, **The Power of Place: How Our Surroundings Shape Our Thoughts, Emotions, and Actions**

New York: Poseidon Press/ Harper Collins, 1994
A look at the importance of "place" in our lives, including the effects of the seasons, light deprivation, altitude and temperature on our behavior. Gallagher's observations about environmental phenomena suggest new directions for those engaged in the design and planning of virtual spaces.

William Gass, **Finding Form**

New York: Alfred A. Knopf, 1996
Insightful commentaries on language, perception and cultural interpretation. Topics include the idea of the book as a 'container of consciousness,' and the popularity of the present tense in fiction as an escape from history and a gesture to the future.

David Gelernter, **Mirror Worlds: The Day Software Puts the Universe in a Shoebox**

New York: Oxford University Press, 1991
Part speculation, part analysis, a lucid and thoughtful argument against the design of simulacra, the falsely replicated environments brought about by information technologies—or what the author dubs "Mirror Worlds."

David Gelernter, **The Muse in the Machine: Computerizing the Poetry of Human Thought** New York: Macmillan / Free Press, 1994

The author, a leader in the field of artificial intelligence, looks at the capacity for computers to embrace aspects of human emotion, including cognition, creativity and dreaming. Gelernter's psychological research is extensive, and his writing style lively and engaging.

Matthew Geller, **From Receiver to Remote Control: The TV Set**

New York: The New Museum of Contemporary Art, 1990

Based on an exhibition at The New Museum of Contemporary Art, this compendium of essays explores the historical role of the television set, and comments on its present and future place in our culture.

Todd Gitlin, **The Whole World is Watching: Mass Media in the Making and Unmaking of the New Left**

Berkeley, CA: University of California Press, 1980
This classic text on the political ramifications of new electronic media explores the increasing or decreasing capacity for democracy and freedom of expression within the context of increasingly complex systems of communication.

April Greiman, **Hybrid Imagery**

London: Architecture, Design, and Technology Press, 1990.

A look at the fusion between technology and contemporary graphic design. Greiman explains her process of "layering", a term she uses to describe her landmark style of building complex collages of digital images, symbols, and type in a manner that has been emulated worldwide.

William Gibson, **Neuromancer**

London: Grafton, 1986
Coining the term "cyberspace", the word that is credited with launching the cyberpunk generation, this is a tour-de-force of science fiction featuring computer mavericks, conspiracy theories and other assorted denizens of cyberculture, all plugging away on the great I-way.

James Gleick, **Chaos: Making a New Science**

New York: Penguin USA, 1988
Gleick chronicles the emergence of revolutionary, non-linear break-throughs in Chaos Theory, from Edward Lorenz's computer model demonstrating the unpredictable nature of weather to the random beauty of Benoit Mandelbrot's fractal geometry.

Ernst H. Gombrich, **The Essential Gombrich: Selected Writings on Art and Culture** London and California: Phaidon/Chronicle Books, 1996

A selection of writings by Sir Ernst Gombrich, including excerpts from such seminal texts as *Art and Illusion*. His insights about how we see are of enormous value to designers, as he believes that works of art "are not the results of some mysterious activity, but objects made by human beings for human beings."

Peter Greenaway, **Papers, Papiers**

Paris: Dis Voir, 1990
Over one hundred paintings, collages and drawings by filmmaker Peter Greenaway, whose diagrammatic, mixed-media renderings suggest useful models for the sequencing of images and the storyboarding of ideas.

Katie Hafner and John Markoff, **Cyberpunk: Outlaws and Hackers**

on the Computer Frontier
New York: Simon and Schuster, 1991
A behind-the-scenes look into the life and motivations of outlaws and hackers, Hafner and Markoff piece together a spellbinding intrigue about the digital underground.

Katie Hafner and Matthew Lyon, **Where Wizards Stay Up Late: The Origins of the Internet**

New York: Simon and Schuster, 1996
"History is to society what memory is to individuals," explains Katie Hafner. With this in mind, this book chronicles the history of the Internet and looks closely at its predecessors and related protocols, including Arpanet, Telnet, FTP and e-mail.

Stephen Hall, **Mapping the Next Millennium: How Computer-Driven Cartography is Revolutionizing the Face of Science**

New York: Random House, 1992
A thoughtful examination of the intricate process of visualizing data, Hall looks at geography, astrophysics, and genetics among other models in an effort to illustrate the vastness and complexity of worlds both real and imaginary.

Charles Handy, **The Age of Paradox** Boston, MA: Harvard Business School Press, 1996
Handy argues for finding order in an age of rapid change and complexity. Examples are drawn from business, family, education, money, citizenship and relationships.

O.B. Hardison, **Disappearing through the Skylight: Culture and Technology in the Twentieth Century**

New York: Viking, 1989
Essays by a distinguished humanist focusing on both the beauty and fascination of technology, and its impact upon society.

Jesica Helfand, **Six Essays on Design and New Media**

New York: William Drenttel New York, 1995
These essays, originally published in *Print Magazine*, examine the impact of technology on the design professions, including the role of electronic typography, the culture of reciprocity, and the lack of texture in online experience.

Tony Hiss, **The Experience of Place**

New York: Alfred A. Knopf, 1990
An exploration of the unique qualities that create a "sense of place." Among such experiences of place the author examines a bend in the road; the proximity of one building to another; and the architectural presence of a town square.

Steven R. Holtzman, **Digital Mantras: The Languages of Abstract and Virtual Worlds** Cambridge, MA: MIT Press, 1994

From Buddhist philosophy to modern linguistics to early twentieth-century music theory, this is an exploration of the function of structure in the arts. By invoking the ideological templates of other disciplines, Holtzman suggests new ways of understanding creative expression in the digital era.

Robert E. Horn, **Mapping Hypertext: The Analysis, Organization, and Display of Knowledge for the Next Generation of On-Line Text and Graphics**

Lexington, MA: Lexington Institute, 1989

Hypertext is explored as a means of mapping, routing and conveying information. Horn gives special attention to the information theories of Edward Tufte and Richard Saul Wurman.

Lewis Hyde, **The Gift: The Imagination and the Erotic Life of Property**

New York: Vintage Books, 1983
An inquiry into the function of creativity in our market-oriented society. Through multi-disciplinary examples, Hyde describes how the "commerce of the creative spirit" is exchanged between artists and within our culture as a whole.

John Brinckerhoff Jackson, **A Sense of Place, A Sense of Time**

New Haven, CT: Yale University Press, 1996
Jackson's thesis is that time and movement have replaced place and permanence as fixations of the American psyche. Looking at locales as dissimilar as parking lots and mountaintops, he explores meaning and familiarity in the complex American urban landscape.

Jane Jacobs, **The Life and Death of Great American Cities**

New York: Vintage Books, 1993
A classic collection of essays that examine the evolution of the city and the cultural implications of urban sprawl, and consider the social functions and aesthetic demands of architecture, design, and planning.

Wassily Kandinsky, **Sounds**

New Haven and London: Yale University Press, 1981
Originally published as a volume of illustrations and poetry in 1912, Kandinsky depicts the nuances of sound with his lyrically abstract poems and woodcuts.

John Kao, **Jamming: The Art and Discipline of Business Creativity**

New York: HarperCollins, 1996
A hands-on guide to tapping into innovation and creativity that revitalizes the management

process. Discussing the art and science of setting challenges and reaching goals, Kao outlines steps to stimulate creativeness in ourselves and others.

Kevin Kelly, **Out of Control: The Rise of Neo-Biological Civilization**

Boston, MA: Addison-Wesley, 1994

An exposé of the complexities of the technologized world as seen through the principles of biology: Kelly looks at ethnology, decentralization, restoration biology, evolutionary advances, and "bottom-up control" and discusses their value in mapping the future.

Stephen Kern, **The Culture of Time and Space: 1880-1918**

Cambridge, MA: Harvard University Press, 1983

A detailed look at time and space through the work of Proust, Strindberg, Picasso, and others. Kern examines the way modern sensibilities have often subverted traditional values, and at the social and political consequences that have emerged as a result.

Art Kleiner, **The Age of Heretics: Heroes, Outlaws and the Forerunners of Corporate Change**

New York: Doubleday, 1995

This book chronicles the careers of corporate mavericks and visionaries who have fought for new ideals in the ever-changing landscape of the American corporation. According to Kleiner, "Those who do not understand change are condemned to stay the same."

Rosalind E. Krauss, **The Optical Unconscious**

Cambridge, MA: MIT Press, 1993

Attempting to challenge the official story of modernism, Krauss reveals the tenets of the "optical unconscious," an opposing movement that resisted modernist trends from the 1920's through 1960's.

Ray Kristof and Amy Satran, **Interactivity by Design**

Mountain View, CA: Adobe Press, 1995

A step-by-step discussion of "interactivity" as a model for understanding multimedia that outlines the process by which designers make decisions and identify tasks necessary for computer screen design. Also includes practical guidelines for interface design and multimedia development.

George Landow, **Hypertext: The Convergence of Contemporary Critical Theory and Technology**

Baltimore and London: Johns Hopkins University Press, 1992

Hypertext is changing the experience of reading and the very nature of what is being read. Landow suggests that it has stimulated the creation of both a new kind of reading and a revolutionary means of publishing.

George P. Landow, ed., **Hyper/Text/Theory**

Baltimore, MD: Johns Hopkins University Press, 1993

A group of essays that examine information technology through the rubric of literary theory. Drawing from Lacan, Derrida, and others, the critics consider hypertext as a literary paradigm, examining its complex philosophical and political impact on contemporary culture.

Richard A. Lanham, **The Electronic Word**

Chicago: University of Chicago Press, 1993

Historian Richard Lanham surveys the evolution of "digital rhetoric" through allegory and analogy, citing examples of contemporary art in an effort to illuminate the many interpretive functions of language.

Brenda Laurel, **The Art of Human Computer Interface Design**

Reading, MA: Addison Wesley, 1990

A broad, comprehensive group of essays that examine the fundamental principles in interaction design. Topics include practical as well as philosophical issues, cognitive factors in GUI design, methodology and practice, and user testing in software development.

Brenda Laurel, **Computers as Theatre**

Menlo Park, CA: Addison Wesley, 1991

Laurel looks at the patterns of human computer interaction as playful, transformative and liberating. The newer (1993) paperback version updates the original edition and features a new chapter on virtual reality.

Le Corbusier, **The Modulor**

Cambridge, MA: MIT Press, 1954

The timeless classic by Le Corbusier that addresses the proportional imperatives uniting man and the man-made. Of particular interest to students looking at the ergonomic relationships between hard and soft interfaces.

Donlyn Lyndon and Chas. W. Moore, **Chambers for a Memory Palace**

Cambridge, MA: MIT Press, 1994

Based on a correspondence between the authors, this book seeks to revive the ancient Roman oratory device linking visual memory to the verbal description of spaces. Note the inspired chapter headings.

Gerald Mast and Marshall Cohen, et al., **Film Theory and Criticism: Introductory Readings**

New York: Oxford University Press, 1992

A comprehensive collection of essays demonstrating the psychology of film and the manipulative properties inherent within it in respect to time and perception.

Scott McCloud, **Understanding Comics: The Invisible Art**

New York: HarperCollins, 1993

McCloud uses the rubric of the comic strip as a paradigm for discussing the perceptual connections that occur when the reader interpolates between frames. A useful model for understanding storytelling with multiple points of access.

James McConkey, **The Anatomy of Memory: An Anthology**

New York: Oxford University Press, 1996

McConkey looks at the role of memory in family, culture, and humanity, and reveals some of the

ways in which it binds together our experiences and our thinking. His examples bridge disciplines and genres from poetry to science, and includes excerpts from his own writings and meditations.

Bill McKibben, **The Age of Missing Information**

New York: Random House, 1992

McKibben's "snapshot" of American culture, derived from over 1,700 hours spent watching television, is contrasted with a subsequent hiking trip through the Adirondacks. His observations about the value of unmediated experience are highly recommended to new media junkies.

Marshall McLuhan, **Understanding Media: The Extensions of Man**

Cambridge, MA: MIT Press, 1994

A thirtieth anniversary (1964) reissue of McLuhan's dramatic expose of then-emerging mass media. A new introduction by Lewis Lapham re-evaluates McLuhan's work in light of the technological, political and social changes of that characterize the late twentieth century.

Marvin Minsky, **The Society of Mind**

New York: Simon and Schuster CD-ROM, 1994

Minsky sees the mind as a society of its own, made up of smaller, discrete subdivisions which he refers to as "agents." Here he describes his theory and uses it to address greater issues of cognition and artificial intelligence.

William J. Mitchell, **The Reconfigured Eye: Visual Truth in the Post-Photographic Era**

Cambridge, MA: The MIT Press, 1992

A critical examination of the technology of making images, looking principally at the aesthetic and ethical issues with regard to digitization, representation, and manipulation.

William J. Mitchell, **City of Bits: Space, Place and The Infobahn**

Cambridge, MA: The MIT Press, 1995

A targeted examination of architecture and urbanism within a virtual vernacular. Mitchell discusses the virtual city as a system of interconnected links, and argues for creating

electronically mediated environments that respond to authentic--read human--behaviors.

Clement Mok, **Designing Business**

San Jose, CA: Adobe Press, 1996

Mok sees the fusion of business and technology as a single, unified informational discipline, and offers observations on the strategic, conceptual and practical role the computer plays in the design and development of new communication systems.

Kevin Mullet and Darrel Sano, **Designing Visual Interfaces**

California: Prentice Hall, 1995

This book suggests a systematic process for enriching the visual design characteristics of an interface, and argues that good design is not only a matter of aesthetics, but also contributes toward the communicative and user-friendly value of an interface.

Multimedia: The Complete Guide

London: Dorling Kindersley Ltd., 1996

A comprehensive and detailed reference on the phenomena that collectively define what we call multimedia: from CD-ROM publishing to Virtual Reality modeling to interactive television, this book demystifies much of the confusion surrounding these complex media.

Josef Müller-Brockman, **Grid Systems in Graphic Design (3rd Edition)**

Switzerland: Arthur Niggli Ltd., 1988

A visual communications manual focusing on the function and use of the grid system in graphic design, and examining its underlying typographic structure. Of enormous value to designers of screen-based media.

Nicholas Negroponte, **Being Digital**

Cambridge, MA: MIT Press, 1995

"Bits" have replaced atoms as the basic commodity of human exchange. Negroponte considers these changes, with a specific look at the transition from mass media to "unimedia", the personalized information systems that underscore this new culture of reciprocity.

Donald Norman, **The Design of Everyday Things**

New York: Doubleday, 1988

Norman explores the cognitive aspects informing the design of products, citing products that are both easy to use and difficult to understand. Norman argues on behalf of design excellence as a key to influencing consumer behavior, and discusses conceptual models, practical applications, physical parameters, and cultural constraints contributing to the success and/or failure of their design.

Donald Norman, **Turn Signals Are the Facial Expressions of Automobiles**

Boston, MA: Addison Wesley, 1992

A collection of short essays that look at the relationship between human beings and the technology that serves us. The title essay is of particular interest; also recommended is Norman's discussion on the multiple readings of "Real Time."

David Ogilvy, **On Advertising**

New York: Atheneum, 1983

A sequel to his celebrated "Confessions of an Advertising Man" published 20 years earlier, the author (co-founder of Ogilvy + Mather) discusses identity, product positioning, and the psychology of targeting consumer audiences.

Ray Oldenberg, **The Great, Good Place**

Marlowe and Co., 1991

A much-quoted and hard to find treatise on the importance of social gathering places in Western culture--the corner pub, for example--suggesting its perhaps equivalent symbolism in the design of virtual places.

Walter J. Ong, **Orality and Literacy: The Technologizing of the Word**

London: Methuen, 1982

An exploration of some of the profound changes in our thought processes and social structure which parallel the development of speech, writing, print, and electronic media.

Victor Papanek, **Design for the Real World: Human Ecology and Social Change**
New York: Pantheon Books/Random House, 1971

With a particular focus on the ethics of design responsibility and the necessity for sustainable ecosystems, Papanek examines the social and societal implications of design as a fundamentally humanist discipline.

Seymour Papert, **The Children's Machine: Rethinking School in the Age of the Computer**

New York: Basic Books, 1993

Chair of Epistemology at MIT, Papert is a cognitive scientist with advanced degrees in both mathematics and child psychology. His principal interest is in how we learn: in this book he draws the distinction between literacy and what he calls LETTERACY--literacy based on the alphabet, reading, and writing.

John Allen Paulos, **A Mathematician Reads the Newspaper**

New York: Basic Books, 1995

This Temple University Mathematics Professor sheds light on how mathematics infiltrates our everyday lives. Written with a sense of humor and paradox, Paulos' meta-level thinking provides a framework for understanding our unpredictable world.

John V. Pavlik, **New Media and the Information Superhighway**

New York: Allyn + Bacon/Simon & Schuster, 1996

A factually uneven but otherwise generally useful overview for students of information design, that explains everything from the origins of the Internet to the engineering specifications of copper-wire cable lines.

Henry Petroski, **Invention by Design: How Engineers Get from Thought to Thing**

Cambridge, MA: Harvard University Press, 1996

The engineer's process involves factors at once ergonomic, economic and ethical, and questions

about the way people interact with each other and with the artifacts we all share. Petroski looks at these artifacts, and illuminates the thinking that goes into their form-giving and fabrication.

Nikolaus Pevsner, **Pioneers of Modern Design**
New York: Penguin Books, 1975

A history of the Modern Movement in architecture and design from the Arts and Crafts Movement of the mid-nineteenth century through the Modernist Movement of the early twentieth century.

Steven Pinker, **The Language Instinct: How the Mind Creates Language**

New York: William Morrow and Co., Inc., 1994

Pinker compares the mind to a Swiss Army knife and describes language as a collection of human instincts that have been finely adapted to solving problems. His description of combinatoria is of particular interest to students of multimedia.

Neil Postman, **Amusing Ourselves to Death: Public Discourse in the Age of Show Business**

New York: Penguin Books, 1985

From Galileo to Gutenberg, Aldous Huxley to Ronald Reagan, a look at media in its broadest context, including observations about the rise of capitalism; the role of government; and the impact of popular culture and mass media on the quality of our lives.

Neil Postman, **Technopoly: The Surrender of Culture to Technology**

New York: Alfred A. Knopf, 1992

A discussion of the finer aspects of democracy, noting the relationships between the power of technology and the pursuit of interpersonal achievement.

Paul Rand, **Paul Rand: A Designer's Art**
New Haven, CT: Yale University Press, 1985

A selection of writings on design principles and practice by the late designer, including a re-vision of his classic 1947 essay *Thoughts on Design*. By way of simple language and visual example, the author explores a variety of topics, including the role of humor, politics and play in design.

Gregory J. E. Rawlins, **Moths to the Flame: The Seductions of Computer Technology**
Cambridge, MA: MIT Press, 1996

From privacy to publishing, virtual reality to networked communication, Rawlins observes the problematic legacy of military and space research, and asks ruthlessly objective questions about where we're headed and what it all means.

Howard Rheingold, **Virtual Reality**
London: Secker and Warburg, 1991

A primer on virtual reality that identifies the mission and explores the discrete component parts that lead to its evolution--an amalgam of science, technology, and cybernetics.

Howard Rheingold, **Virtual Communities**
New York: Addison Wesley, 1993.

A look at the military and educational communities that used the earliest versions of the internet (Arpanet) in the mid-20th century. This historical background introduces a discussion of the many communities that participate within this global network today.

Fred Ritchin, **In Our Own Image: The Coming Revolution of Photography**

New York: Aperture, 1990

In a thoughtful appeal to the responsibilities implicit in reporting and photojournalism, Ritchin questions the truthfulness of computer-aided photography, and discusses authorship, ownership, visual literacy, and the increasingly questionable verisimilitude of the press.

Wendy Richmond, **Design and Technology: Erasing the Boundaries**

New York: Van Nostrand Reinhold, 1990

A chronicle of the increasingly overlapping fields of graphic design and computer technology in which the author describes the pitfalls of technology-driven design, and pays particular attention to the way designers think, behave, and perform with and because of computers.

Harry Robin, **The Scientific Image: From Cave to Computer**

New York: W.H. Freeman & Co., 1992

An inspirational compendium of scientific and technological innovation from such luminaries as Darwin and Edison, including descriptions and analyses of their discoveries. With an excellent forward by Daniel Kevles.

David Rothenberg, **Hand's End: Technology and the Limits of Nature**

Berkeley, CA: University of California Press, 1993

Rothenberg positions technology as an extension of humanity itself, and traces the cultural forces that parallel its rich evolution, taking his cue (and illustrations) from a 16th century military engineer whose illustrated book was one of the most celebrated of its era.

Colin Rowe and Fred Koetter, **Collage City**
Cambridge, MA: MIT Press, 1978

A collection of essays in which the authors reject the modular, controlled planning models that typify twentieth century urbanism, in favor of a more fragmented vernacular inspired by the notions of collision, collage, and bricolage.

Douglas Rushkoff, **Cyberia: Life in the Trenches of Cyberspace**

San Francisco, CA: Harper San Francisco, 1994

A portrait of American life as characterized by digital interconnections. Rushkoff describes an electronically charged culture that merges science, art, technology, and popular culture, pointing to the introduction of a new aesthetic and social order.

Douglas Rushkoff, **Media Virus: Hidden Agendas in Popular Culture**

New York: Ballantine Books, 1994

An exploration of the late twentieth century datasphere where information of any kind travels in the blink of an eye. Rushkoff examines how the popular media both manipulates and is manipulated by those who know how to tap into its power.

Michael Schrage, **Shared Minds: The New Technologies of Collaboration**

New York: Random House, 1990

A look at the role and function of collaboration, and its value in building teams and mapping new processes for developing ideas and products. Includes a discussion on the tools available to make interpersonal collaboration work across networks.

Fred Schumacher, **Small Is Beautiful**
London: Harper and Row, 1983

In this book which is subtitled, "Economics as if People Mattered," Schumacher goes beyond an ethnocentric Western world view and challenges "growthmania" as a phenomenon that is robbing the world of its unrenewable resources and threatening environmental and social equilibria.

Peter Schwartz, **The Art of the Long View: Planning for the Future in an Uncertain World**

New York: Doubleday, 1991

Convergent thinking about divergent futures offers a new perspective for understanding global business scenarios in the twenty-first century.

Mark Slouka, **War of the Worlds**

New York: Basic Books, 1995

In one of the best pieces of cultural criticism written to date, Slouka looks at technology's "assault" on identity and community, and critiques the evangelism, the artificiality and the absence of ethics in cyberspace.

Michael Sorkin, ed., **Variations on a Theme Park: The New American City and the End of Public Space**

New York: Hill and Wang, 1992

Eight essays that compare notions of contemporary urbanism with the idea of the theme park: here understood as a simulated reality in which human interaction is manipulated and highly controlled. Examples include Silicon Valley, Epcot Center, and Downtown Los Angeles.

Bruce Sterling and William Gibson, **The Difference Engine**

New York: Bantam Books, 1991

A collaborative novel by premier cyberpunks Sterling and Gibson. Part detective story, part thriller, this novel takes us back to an imagined 1885--where the Industrial Revolution is in full swing and a steam-driven calculator ushers in the computer age a century ahead of its time.

Fred A. Stitt, **Design Office Management**
Santa Monica, CA: Arts and Architecture Press, 1992

Though geared principally toward architectural practice, this is an excellent text on managing design businesses. It is based on broad conceptual models well suited to graphic and interaction design.

Clifford Stoll, **Silicon Snake Oil: Second Thoughts on the Information Highway**

New York: Doubleday, 1995

The author questions the fundamental purpose and usefulness of the Internet and examines several significant roadblocks along the way. Stoll mirrors such writers as Birkerts and Slouka in his observations about the dubious impact of computers on the quality of our lives.

Allucquere Rosanne Stone, **The War of Desire and Technology at the Close of the Mechanical Age**

Cambridge, MA: MIT Press, 1995

Stone examines the ways in which communication technologies are masking social interaction, thereby altering our concepts of identity, particularly with regard to gender. Her thesis is that the rise of computer-mediated interaction jeopardizes the true--and truthful--self.

Igor Stravinski, **Poetics of Music**

Cambridge, MA: Harvard University Press, 1942

Stravinsky reflects on the means by which essential musical elements--composition, orchestration and performance, among others--mix to create a "composite experience." A valuable model for designers trying to reconcile the integration of disparate media in the visualization of interactive media.

John Sturrock, ed., **Structuralism and Since: From Levi Strauss to Derrida**
Oxford and New York: Oxford University Press, 1979

A good overview of structuralist theory, including essays on the writings of Saussure, Levi-Strauss, Barthes, Foucault, Derrida and Lacan.

Manfredo Tafuri, **Architecture and Utopia**
Cambridge: MIT Press, 1976
Written from a Neo-Marxist perspective by a well-known Italian architectural historian, this book goes beyond discussions of architectural form and explores the relationship of architecture to society and architects to the marketplace.

Don Tapscott, **The Digital Economy: Promise and Peril in the Age of Networked Intelligence**
New York: McGraw-Hill, 1996
The author of *Paradigm Shift* explores the impact new technologies have on business and commerce and argues for the transformation of traditional processes and the invention of new models.

Albert Teich, ed., **Technology and the Future**
New York: St. Martin's Press, 1993
A contemporary classic in the field of technology and society, this book is divided into four sections: thinking about technology; assessing the impact of technology; reshaping technology and using technology.

John Thackara, ed., **Design after Modernism: Beyond the Object**
London: Thames and Hudson, 1988
A collection of essays that examine, among other topics, the meaning of modernism; the complexity of the city; the impact of information technologies; and the death of functionalism. Contributors include Jean Baudrillard, Kenneth Frampton, and John Thackara.

Alexander Theroux, **The Primary Colors: Three Essays**
New York: Henry Holt & Co., 1994
A detailed and lyrical examination of the colors red, yellow and blue, including references to literature, music, Eastern mythology, Western symbolism, Renaissance allegory and surprisingly irreverent selections from our own popular culture.

Alexander Theroux, **The Secondary Colors**
New York: Henry Holt & Co., 1996
A sequel to his acclaimed book, *The Primary Colors*, Theroux examines green, orange, and purple in equally excruciating detail.

Cecilia Ticchi, **Shifting Gears: Technology, Literature, Culture in Modernist America**
Chapel Hill, NC: University of North Carolina Press, 1987
Ticchi looks at our love/hate relationship with technology, and traces its evolution throughout the industrial revolution, with a particular look at the subversive art and literature movements that characterize creative thinking in the early 20th century.

Bernard Tschumi, **Architecture and Disjunction**
Cambridge, MA: MIT Press, 1996
Tschumi's fundamental interest lies in debunking the nostalgia that typifies modernist ideology in favor of a post-industrial "unhomeliness," reflected in the complex, multipurpose programs of cities like New York and Tokyo.

Marsha Tucker, senior editor with Brian Wallis, Christopher Phillips, and Tim Yohn, staff editors, **Art after Modernism: Rethinking Representation**
New York: The New Museum of Contemporary Art and Boston, 1984
A comprehensive survey of some of the most provocative directions in recent art and criticism, exploring such topics as the decline of modernism and the emergence of postmodern practices in painting, film, video, and photography.

Edward R. Tufte, **Envisioning Information**
Cheshire CT: Graphics Press, 1988
Statistician and noted author Edward Tufte observes the minutiae that determine how we read maps and charts, and offers insights on the perception of raw data. His observations are supported by exceptional examples and rich, historical documentation.

Edward R. Tufte, **The Visual Display of Quantitative Information**
Cheshire CT: Graphics Press, 1988
Referred to as the "Strunk & White" of information design, a look at statistical graphics with a particular emphasis on how to clarify complex information. Recommended reading for all designers, especially those engaged in interactive media.

Sherry Turkle, **Life on the Screen: Identity in the Age of the Internet**
New York: Simon and Schuster, 1995
An ethnographic and sociological survey of the forces shaping the evolution of our on-line and on screen identities. In a medium in which self-representation is accomplished through visualization, Turkle's inquiry is of particular relevance to designers. Includes discussions of artificial intelligence, agents and avatars.

Willem Velhoven and Jorinde Seijdel, eds., and Neville Brody, **Multimedia Graphics: The Best of Global Hyperdesign**
San Francisco, CA: Chronicle Books, 1996
An excellent resource book for interface designers. A fully illustrated compendium of CD-ROM and World Wide Web sites from around the world.

Paul Virilio, **The Art of the Motor (L'Art du Moteur)**
Paris: Editions Galilée 1995, U. Minnesota Press, 1993
The concept of information as speed is presented here as the third dimension of matter. Virilio considers how technology has enabled the serialization of images and the mutation of appearances through technological means which are changing how we live and work.

Samuel Weber, **Mass Mediasaurus**
Stanford, CA: Stanford University Press, 1996
Thoughtful commentary on the media (particularly television) as seen through the template of literary deconstruction, paying close attention to the transformative shift from work-oriented to medium-oriented notions of art and reality.

John White, **The Birth and Rebirth of Pictorial Space**
Cambridge, MA: The Belknap Press of Harvard University Press, 1987
Reflections on rendering dimension in pictorial space with references to Italian Renaissance painting and the development of perspective.

John Whitney, **Digital Harmony: On the Complimentarity of Music and Visual Art**
Peterborough, NH: Byte Books, 1990
An investigation of the relationship between art and music, with a special emphasis on computer composition.

Richard Saul Wurman, **Information Anxiety**
New York: Doubleday, 1989
Wurman tackles the ever-widening gap between what we understand and what we think we should understand—describing this gap as the black hole between data and knowledge.

R. S. Wurman, **Information Architects**
Zurich: Graphis Press Corp., 1996
Containing the work of more than 20 designers, illustrators and architects whose work reflect the emerging discipline of "information design", this book gives special attention to the way large blocks of data are "built" and incorporated into graphically compelling information packages.

Robert Venturi, Denise Scott Brown and Steven Izenour, **Learning From Las Vegas**
Cambridge, MA: MIT Press, 1977
An interesting look at the communication of architecture. Notions of symbology, mobility, and scale translate into a very applicable model for information designers.

Shoshona Zuboff, **In the Age of the Smart Machine**
New York: Basic Books, 1988
A landmark book on technology and work patterns that argues for the choice to "infomate", a process that gives workers knowledge to make critical judgements, or to "automate", a dehumanizing process that alienates workers.

