Global Network Navigator

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GNN's ™ "Book Story" Presents The Third Culture on the Internet

SEBASTOPOL, CA--April 3, 1995--John Brockman's new book, The Third Culture (Simon & Schuster, May 1995) has been called "an engaging, unparalleled road map to the frontiers of research and speculation in evolutionary biology, genetics, artificial intelligence, psychology, and physics (Publishers Weekly)."

The Global Network Navigator™ (GNN) has been called "a historic milestone: an editorially and visually sophisticated front end to the Internet (Howard Rheingold, Wired)."

Put The Third Culture on GNN in an interactive form that goes beyond the boundaries of the printed page, continue the book's heated dialogue, add an interview with the author, give readers an email platform for communicating with him and the third culture scientists, and you have a milestone in publishing history.

Book Story, GNN's newest online publication, is the first Internet platform to provide an interactive forum for authors and readers to meet. Book Story serializes books in all genres, features author interviews and chats, and allows readers to contact authors with the ease and efficiency of email. Reader queries and author responses are edited into a "reader interview," which may elaborate on points raised in the book, explore the writing process, or initiate an ongoing debate. Classes, real-time forums, and online ordering are future features of Book Story.

The first installment, to be launched tomorrow, will present an interview with John Brockman and excerpts from part one ("The Evolutionary Idea") of his compelling new book, The Third Culture. Brockman spent three years talking with 23 leading scientists about science, human nature, and the nature of the universe. He argues that scientists, not the literary intellectuals, have the most to say about the future of humanity, and his book offers an inside look at how prominent thinkers approach their research and where their theories collide.

"The book has the flavor of high-level dialogue and debate that lends itself to an expanding form only the Internet could allow for," says GNN managing editor Joan Callahan. "It has the polish of serious literature. And it's fun to read. When you add the other elements of Book Story(the interview with John, the ongoing dialogue among the scientists, and the reader queries that material will generate(you get the effect of going to an author reading at your local bookstore or participating in a cutting-edge conference."

Book Story gives readers a unique opportunity to look on as evolutionary science, artificial intelligence, cosmological origins, and information technology are hotly(and lucidly(debated. Among the prominent scientists featured are: Richard Dawkins, considered one of the leading voices in the ultra-Darwinist school of evolutionary biology, who presents his idea that the individual organism is a survival machine for its genes; Stephen Jay Gould, who carries forward the attitude of many paleontologists towards evolutionary biology(namely, skepticism regarding the domains and the powers of natural selection; and Lynn Margulis, who contends that real insight into the creative sources of evolution come, not from the zoological tradition that Dawkins and Gould work in, but from the study of cells and microorganisms.

"The Third Culture is an ideal book to present online," says GNN Director Dale Dougherty. "It offers multiple views of innovative thinkers who are pushing the frontiers of science. The Internet thrives on multiple views, and it is pushing the frontiers of communication technology. The Book Story excerpts will allow our readers to be among the first to examine and respond to The Third Culture. They are sure to be intrigued by the emerging culture that Brockman's book describes."

Jack Romanos, President of Simon & Schuster's Consumer Group, says, "We're very excited that GNN chose to launch Book Story with The Third Culture. It's a book that invites reader inquiry and participation, and the Internet is the perfect medium to generate discussion and debate. We think the Book Story serialization will help us reach a worldwide audience."

GNN has more than 170,000 subscribers. It is a free service available to anyone with full Internet access via a World Wide Web browser such as Mosaic, Lynx, or Netscape. GNN's Book Story will run the introduction and first chapter of The Third Culture for one week, beginning tomorrow. Subsequent chapters will appear in following weeks, along with continued discussion among the scientists and reader queries. To access Book Story, point your Web browser to http://gnn.com/

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EXECUTIVE SUMMARY

CONTENT.COM, Inc., is a new kind of information company, designed from the ground up to exploit the opportunities inherent in the revolutionary shift from analog media to digital media, or as Nicholas Negroponte and other futurists put it, the shift from selling things to selling bits of information. Unencumbered by the inefficiencies and outmoded thinking of the ink-on-paper world, CONTENT.COM is being built around new definitions of content that truly leverage the capabilities inherent in digital communications. It is the mission of CONTENT.COM to create compelling, great content for digital mediums that is truly high quality, appropriate, and commercially viable.

The vision of this content is inspired and guided by CONTENT.COM's prestigious Board of Advisors and staff which includes some of the world's most respected, and in some cases revered thinkers and writers on information technology, virtual communities, artificial intelligence, communications and other disciplines. Chairman of this Board of Advisors is Marvin Minsky, the world's premier scientist in the area of artificial intelligence. Other board and staff members include Stewart Brand, founder of the WELL and the *Whole Earth Catalog*; John Perry Barlow, cofounder of the Electronic Frontier Foundation and lyricist for The Grateful Dead; biologist Stephen Jay Gould, Harvard University, author, *Wonderful Life* Danny Hillis, cofounder of Thinking Machines, builder of the world's fastest computer; Stewart McBride, Founding Director, Center for Creative Imaging, and founder, United Digital Artists; Howard Rheingold, founding Executive Editor of *HotWired* and one of its principle architects; AI expert Roger Schank, Roger Schank, Director, The Institute for the Learning Sciences; David Shipley. former editor, *The New York Times* Op-Ed page and former Executive Editor, *The New Republic*; and Clifford Stoll, author of the best-selling *The Cuckoo's Egg*.

The founders of CONTENT.COM, include its Chairman, John Brockman, a pioneer in multimedia, and a literary and software agent, whose client list of 250 authors includes many of the world's leading thinkers; and its President and CEO, David Bunnell, a pioneer of the personal computer industry who founded several blockbuster, successful magazines including *PC, PC World, Macworld, Publish* and *NewMedia.*

The combination of the relationships of the principals of CONTENT.COM and its Board of Advisors will instantly establish the company as the source, the community to go to for intellectual high-end, expert, authoritative content—whether it be in the sciences, the arts, technology, business, journalism, politics, culture, special interests, etc.

CONTENT.COM is new media agnostic. The idea is to develop the best content for digital media, whether that media is the Internet, a commercial online provider like Microsoft, Interactive Television, CD-ROM, or any other new media. Initially, CONTENT.COM will be the incubator for great content to be sold and/or licensed to the major information service providers (such as *Compuserve, Microsoft Network, America Online*) as well as being offered directly to subscribers on the Internet. The company will also put its content on CD-ROM and provide digital services to other publishers.

CONTENT.COM plans to launch *interactive online Channels* targeting a subject or subject area, populated with superstar writers, thinkers, and personalities. These *Channels* will be beta tested on the Internet and thereby create the initial community of interested participants including subscribers, writers, editors, thinkers. Simultaneously, we will identify and sign up initial sponsors (advertisers) for the channel.

Some of the inspiration for the *Channels* comes from *HotWired*, the Internet based service launched in 1994 by *Wired* magazine. Howard Rheingold, the Director of Online Services for CONTENT.COM, was the founding Executive Editor of *HotWired* and one of its principal architects. *HotWired* received over 350,000 hits on its WWW (World-Wide-Web) pages the first day it was open. In six months, the service has signed up over 90,000 subscribers, and 12 advertising sponsors, including IBM, Volvo, AT&T, and Club Med, who pay $10,000 a month for interactive advertising linked to *HotWired* pages.

Channels, as envisioned by CONTENT.COM, is different from *HotWired* in several important respects. More broadly focused, these *Channels* will bring the minds of today's leading edge thinkers and writers in more-or-less direct contact with their audience, within the virtual community of discourse. The content binding this audience will include prepublication excerpts from forthcoming books, specially writ-

ten short essays about aspect of each thinker's work, even shorter comments, moderated real-time online chats, asynchronous hallway discussions, radio interviews with downloadable audio files, video and animation clips, interactive learning exercises, ongoing master tutorials by specific world-class thinkers on specific topics; all accompanied by visual design and imagery appropriate for the online medium and linked to other related sites.*Channels* will also include related online classified advertising and online shopping centers that will directly sell products and services appropriate to these audiences.

Thus the communities resulting from CONTENT.COM *Channels* will consist of very large numbers of demographically well-heeled and educated people who share common interests. These communities should be tremendously attractive audiences for advertising sponsors who will be able to provide our subscribers with targeted, in-depth information about their products and services at a cost that is much cheaper than television, radio or print. The advertising revenue potential for a properly conceived and managed channel of several million subscribers should be huge.

The *Channels* created by CONTENT.COM can reside on any or several, if not all of the available online services. By first creating them as Internet *Channels*, they can be beta tested with a wide audience of users at a relatively lower cost than testing them on commercial services. Yet, once these *Channels* are tested they can be moved to or duplicated on other services.

CONTENT.COM plans to publish CD-ROMs which are synergistic and interconnected with the online *Channels*. Taking advantage of the bandwidth provided by CD-ROM, these offerings will include video related to the *Channels* as well as a rich table of contents that becomes the launching point to the online service.

CONTENT.COM also plans to create a Digital Service Bureau to provide all the requisite services necessary for publishing and other international media companies to re-purpose their paper-based products into new media products. In this regard, CONTENT.COM plans to position itself as a nonexclusive resource in the same manner that a printer such as R.R. Donnelly works with nearly all publishing companies. This will help us leverage the investment which we will have to make in digital publishing technology in order to produce our own content.

The goal of CONTENT.COM is to become the first major, full-service New Media publisher. Currently there are no major plays in New Media. Nearly all the companies are startups, marginally capitalized. There is no Sony in New Media, no Toshiba, no AT&T, no ABC/Cap Cities, no TCI. Yet the cable people, the computer companies, the telecommunicators, the entertainment and publishing companies all want a piece of the action.

CONTENT.COM, Inc., is positioned to becoming the first mega-company new media. CONTENT.COM has what everyone wants. It has the content.

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President & CEO

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V.P., Strategic Planning

To Be Announced
V.P. & CFO

To Be Announced
V.P.,Marketing

To Be Announced
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3

"The future world of electronic content and commerce..is...not the world most intellectual property owners have been planning for, contracting for, securing rights for."

—Esther Dyson

"Older generations of people tend to think of 'content,' like text and pictures, as being distinct from the interactive components that provide access to them. Younger people, especially those who are now under ten, tend to think of the interactive quality as being the content."

—Jaron Lanier

"Information is relationship."

—John Perry Barlow

CONTENT IN THE DIGITAL AGE

Steward Brand, founder of The WELL (Whole Earth 'Lectronic Link) points out in the *GBN Book Club Newsletter* that "Bits are bits, not things. As the economy shifts from primarily distributing things to primarily distributing bits, it is being transformed almost unrecognizably. The whole nature and flow of value is shifting. Not only is the business environment altering radically, the function of business itself is morphing. But toward what?"

Esther Dyson, publisher of the influential computer industry newsletter *Release 1.0.* writes in "Intellectual Property on the Net" (Dec., 1994): "the future world of electronic content and commerce..is...not the world most intellectual property owners have been planning for, contracting for, securing rights for." Those 10,000 backlist titles in the warehouse (aka "paper-based assets") are not assets in the electronic information economy. Content does not sit in a warehouse or on your library shelf.

Content is context.

"Information is an Activity," John Perry Barlow writes in *Wired Magazine* ("The Economy of Ideas: A Framework for Rethinking Patents and Copyrights in the Digital Age—Everything You Know About Intellectual Property is Wrong.") "Information Is a Verb, Not a Noun. Freed of its containers, information is obviously not a thing. In fact, it is something that happens in the field of interaction between minds or objects or other pieces of information."

Barlow, who is cofounder of The Electronic Frontier Foundation, uses a medieval model of storytelling to render visible the new digital model. When stories are passed from generation to generation there is no definitive version, no authorized authorship. "Digital information," he writes, "unconstrained by packaging, is a continuing process." He sees a diminishing value in the traditional importance of authorship.

In this new environment, according to Barlow "information is a relationship, meaning has value and is unique to each case. In most cases, we assign value to information based on its meaningfulness. The place where information dwells, the holy moment where transmission becomes reception, is a region which has many shifting characteristics and flavors depending on the relationship of sender and receiver, the depth of their interactivity."

His counter-intuitive argument is that "familiarity has more value than scarcity." The way to raise demand for a product is give it away. Barlow, the lyricist of The Grateful Dead, points to their practice of allowing anyone to tape their concerts. The value is in the real-time relationship. If you want the real thing (which validates your free tapes) you have to buy a ticket from them. This practice has made the group the biggest concert draw in America. "Our intellectual property protection," he points out, "derives from our being the only real-time source of it."

Barlow points out that "point of view and authority have value. Reality is an edit. People are willing to pay for the authority of those editors whose point of view seems to fit best. And again, point of view is an asset which cannot be stolen or duplicated." In a world of what he terms "liquid commerce," real-time performance, based more on relationship than possession provides a model which can be expanded to cover most forms of information exchange. "Commercial exchange will be more like ticket sales to a continuous show than the purchase of discrete bundles of that which is being shown."

Liquid commerce also indicates that service replaces authorship. Barlow writes: "The entire professional class - doctors, lawyers, consultants, architects, and so on - are already being paid directly for their intellectual property. Who needs copyright when you're on a retainer?"

Rather than relying on copyright, the economic future belongs to those who can create direct interaction with their customers. Barlow sees "question and answer" relationships between authorities (or artists) and those who seek their expertise."

Text supplanted by billable interactivity will be the hallmark of the New Media. Barlow notes that "as people move into the Net, and increasingly get their information directly from its point of production,

unfiltered by centralized media, they will attempt to develop the same interactive ability to probe reality that only experience has provided them in the past. Live access to these distant 'eyes and ears' will be much easier to cordon than access to static bundles of stored but easily reproducible information."

Esther Dyson sums up the business realities implicit in this "Barlovian" exposition. She envisions content-based value on the Net created through "services (the *transformation* of bits rather than the bits themselves), the selection of content, the presence of other people, and assurance of authenticity—reliable information about sources of bits and their future flows. In short, intellectual *processes* and *services* appreciate; intellectual *assets* depreciate."

Dyson makes the radical suggestion that "content (including software) will serve as advertising for services such as support, aggregation, filtering, assembly and integration of content modules, or training—or it will be a by-product of paid-for relationships... The likely best defense for content providers is to exploit that situation—to distribute intellectual property free in order to sell services and relationships. The provider's task is to figure out what to charge for and what to give away free—all in the context of what other providers are doing and what customers expect. *This is not a moral decision but a business strategy.*"

The end users, according to her scheme, might be given access to works on the Net for free. "The payments to creators," she writes, "are likely to come not from the viewers, readers, or listeners, but from companies who use the content as—or to deliver—advertising...The challenge for advertisers is not being paid, but making sure that their advertising messages are inextricable from the content. The intellectual activity of agents—talent scouts, advisors, creative packagers —will be valuable and richly rewarded."

Writing about the architecture of computer networks in *NetView* (GBN, Vol. 6, #1,Winter 1994-5) computer scientist and virtual reality pioneer Jaron Lanier points out that the "network's design is like genetic material out of which our culture unfolds, and intimate and pervasive presence, a thing, like the structure of our spoken language, whose influence is too great to be isolated or measured."

"The influence of network architecture," he continues, "involves communication across distance or time. We are about to create the material with which our civilization will be largely woven for generations to come. The design of the information infrastructure will form the weave and the flow of its contents, which will be most of what we create together and pass on as legacy."

One of Lanier's main points is that "access is not just the availability of equipment and time on a wire. It must also mean, for instance, the creation of brilliant user interfaces. Even more importantly, it must also include the creation of wonderful authoring tools and a new definition of basic literacy that includes proficiency in using them. Using the network without being able to program it, at least a little bit, isn't real access, just as reading a book without having any ability to write is not an acceptable form of reading."

Architectural design issues are crucial in determining who can be the creator of material. "Older generations of people tend to think of 'content,' like text and pictures, as being distinct from the interactive components that provide access to them. Younger people, especially those who are now under ten, tend to think of the interactive quality as being the content. Alas, the design of the interactive component might be predetermined, to varying degrees, in various visions of where networks are going."

Lanier argues against perpetuating the television model. He ties the increase of material on the cable tv networks to the increase of low quality programming. "The channels have also attained stupendously low quality, such as I could not have imagined. This brings us to another point: we must also find a way to create bodies of quality material in the face of unlimited public access. While you can find some of the best information in the world online, you can also find the very worst. There are silly, paranoid, or generally imbalance bulletin boards and newsgroups in great profusion."

"The usual solution proposed to this problem is to imagine professional human editors or automated programs selling their services to find and present the best quality content. This solution (at least the human version) will undoubtedly come to pass......"

David Bunnell
President & Chief Executive Officer

David Bunnell is Chairman of HyperMedia Communications, Inc. (NASDAQ: HYPER; PSE:HPR), a publicly-traded corporation, and Editor-in-Chief of *NewMedia Magazine*. He is a computer industry pioneer and legend as the founder of such well-known computer magazines as *PC Magazine, Personal Computing, PC World, Macworld* and *Publish*.

In 1981, working out of his bedroom, Mr. Bunnell launched *PC Magazine*, the industry's first "machine specific" publication, which was dedicated to the IBM personal computer. By 1983, the magazine was the publishing success story of the decade, regularly running 500 to 600 pages per issue. The magazine was sold by Mr. Bunnell to Ziff-Davis. It currently has a paid circulation of approximately 1,000,000, and annual advertising revenues in excess of $300,000,000.

From 1983 through 1988, Mr Bunnell was Chairman of PCW Communications, Inc., a company he founded after his sale of *PC Magazine* to Ziff-Davis, that is now a subsidiary of International Data Group, Inc. publishers of *PC World, Macworld,* and *Publish* magazines. By 1988, a group of 200 people reported to Mr. Bunnell.

In 1984, he timed the release of the first issue of *Macworld* to correspond with the introduction of the Macintosh computer by Apple Computer, Inc. From 1988 through 1993, he was Chairman of Io Publishing, a multimedia information service to the biotechnology industry, and publisher of *BioWorld Today: The Daily Biotechnology Newspaper.*

HyperMedia is the publisher of *NewMedia Magazine*, the first publication dedicated solely to covering multimedia technologies across all major platforms, disciplines, and applications, with a controlled circulation of over 250,000 qualified subscribers per issue who receive 13 issues annually. *NewMedia* serves professionals who design, develop, buy and use multimedia products and services.

Revenues from *NewMedia* are derived primarily from advertisers. Regular advertisers have included: Advanced Gravis, Apple, ATI, Avid, Asymetrix, Canon, Chinon, Compton's NewMedia, Corel, Creative Labs, Dell, Educational Resources, Fujitsu, HSC Software, IBM, In Focus, Macromedia, Media Vision, Metatec, Microsoft, NEC, nView, Passport Designs, Optimage, Orchid, Phillips, Phillips, Pioneer, Prentice-Hall, Proxima, Radius, RasterOps, Roland, Sigma Designs, Silicon Graphics, Sony, TDK, Telex, Toshiba, Truevision, Turtle Beach, Videologic, and Yamaha.

HyperMedia also publishes two newsletters: *Macromedia User Journal*, an independent guide for *Macromedia* developers and users; and *Inside Report on NewMedia*, a publication for leaders within the multimedia-related fields of computers, communications, and entertainment. HyperMedia produces the *NewMedia* INVISION Multimedia Awards Program, an annual competition designed to recognize organizations and individuals for advancing the use of multimedia through innovative applications in business, government, education, and consumer and community service areas.

Stewart Brand
V.P., Strategic Planning

"Always Two Steps Ahead: Is Stewart Brand the Least Recognized, Most Influential Thinker in America?" *The Los Angeles Times Magazine* asked on a recent cover (October 30, 1994). "How Stewart Brand Learns: He Created the *Whole Earth Catalog* and Popularized the Personal Computer. For 25 Years, This Writer-Gadfly-Futurist has reinvented Himself-and Shape How We Live," was the story lead.

Stewart Brand is a legendary figure, unclassifiable, who is one of the most interesting thinkers in the world. He has been involved in computer networks for years, and has thought deeply about the development of the New Media future.

His main activity at present is as a founding member of Global Business Network. GBN explores global futures and business strategy for 61 multinational clients (nearly all of which are among the Global *Fortune* 1,000, and half of which are in the top 100) . They include ABC/Cap Cities, Arco, AT&T, Andersen Consulting, Bell South, Leo Burdett, Clorox, Fiat, IBM, Nissan, L'Oreal, Volvo, and Xerox.

Brand, 56, a graduate of Phillips Exeter and Stanford (Biology), was an Airborne U.S. Army officer from 1960 to 1962, during which time he taught basic infantry training and worked as photojournalist out of the Pentagon.

From 1962-68, he created sundry multi-media performances ("America Needs Indians," "War: God") and public events ("Trips Festival," "Whatever it Is," "World War IV"), and collaborated on museum exhibits ("Astronomia," "We Are All 1"). In 1966, he conceived and sold buttons which read, "Why Haven't We Seen A Photograph of the Whole Earth Yet?" Legend has it that this accelerated NASA's making good color photos of Earth from distant space during the Apollo program and that the ecology movement took shape in 1968-9 partially as a result of those photos.

From 1968-72, Brand founded, edited, and published the original *Whole Earth Catalog*. In 1972, he received the National Book Award for *The Last Whole Earth Catalog* (Random House) 1.5 million copies sold, (All editions sales were over 2.5 million; a *Millennium Whole Earth Catalog* came out in 1994, with a foreword by Brand.)

He founded Point Foundation in 1972, which gave away $1 million in three years to assorted effective individuals. Point is the nonprofit foundation which runs all the Whole Earth activities. In 1973, he conceived and organized "The New Games Tournament," which resulted in two books, *New Games* and *More New Games*, by Andrew Fluegelman.

In 1974, Brand authored *Two Cybernetic Frontiers* (Random House) on Gregory Bateson and cutting-edge computer science. It had the first use of the term "personal computer" in print and was the first book to report on computer hackers. In 1974, he edited and published the *Whole Earth Epilog* (Penguin).

This led, in 1974-85, to founding, editing, and publishing *CoEvolution Quarterly*. (It continues as *Whole Earth Review*.) He edited *Space Colonies* and co-edited *Soft Tech* (Penguin) in 1976. During the next two years, 1977-79, he was advisor to Governor of California Edmund G. Brown, Jr. In 1980-81, Brand edited and published *The Next Whole Earth Catalog* (Random House).

During 1982-83, Brand founded Uncommon Courtesy: School of Compassionate Skills, which gave sessions on such subjects as "Creative Philanthropy," "Business as Service," "Street Saint Skills." He also served on the faculty of School of Management and Strategic Studies, Western Behavioral Sciences Institute, La Jolla, California. In 1983-85, he was editor-in-chief, *Whole Earth Software Catalog*, Doubleday.

Brand founded The *WELL* in 1984 (Whole Earth 'Lectronic Link), a computer teleconference system for the San Francisco Bay Area. It now has 10,000 active users worldwide and is considered a bellwether of the genre—1988 Community Journalism Award from Media Alliance, 1990 Best Online Publication Award from Computer Press Association, 1994 Electronic Frontier Foundation Pioneer Award. This led to his initiating and organizing "The Hackers' Conference," which became a TV special by Fabrice Florin, broadcast nationally. Since 1986 it is an annual event.

During 1986, Brand co-edited with Art Kleiner, *News That Stayed News,* North Point Press, an anthology of greatest pieces from *Co-Evolution*. He was Visiting Scientist, The Media Laboratory, MIT, and began consulting with Group Planning, Royal Dutch Shell, London.

In 1987, he wrote The *Media Lab: Inventing the Future at MIT* (Viking-Penguin) which is still in print in 1995 (7th printing). He was the organizer, of a private conference series on Learning in Complex Systems sponsored by strategic planners at Royal Dutch/Shell, Volvo, and AT&T. In 1988, he led seminar at University of California, Berkeley, Architecture Department on *How Buildings Learn.*

Brand was cofounder of Global Business Network (GBN) with Peter Schwartz, Jay Ogilvy, and others in 1988. He founded and runs the "GBN Book Club." Most of his time today is devoted to GBN work which involves consulting with many of the world's largest corporations.

In 1988, he wrote "Indians and the Counterculture, 1960s-1970s," in *History of Indian-White Rela-*

tions," Vol. 4 in the authoritative *Handbook of North American Indians*, Smithsonian Institution.

In 1989, Brand was named a member of the Board of Trustees of Santa Fe Institute, the interdisciplinary center studying the sciences of complexity. He also received the Golden Gadfly Lifetime Achievement Award from Media Alliance, San Francisco.

From 1990 to the present, Brand has been a member of the Board of Directors of the Electronic Frontier Foundation, an organization which supports civil rights in electronic media. He is also an advisor to Ecotrust, Portland-based preservers of temperate rain forest from Alaska to San Francisco.

In 1994, he became a consultant (one day a week) to Interval Research Corporation, Palo Alto, California, founded by David Liddle and Microsoft's Paul Allen to invent a deeper future for personal electronics. He also published his latest book, *How Buildings Learn: What Happens After They're Built* (Viking-US and Penguin-UK). "A classic," says urban economist Jane Jacobs.

8

John Brockman
Chairman

John Brockman, is Chairman and CEO of Brockman, Inc., a literary and software agency, specializing in marketing works of serious nonfiction internationally. Through the use of new communications technology, he has revolutionized the agency business by selling his projects directly to publishers in 30 language marketplaces. He is the packager of *Science Masters™* (22-books) and *Master Classes™* (60-books), which are being translated into 26-languages for near-simultaneous publication throughout the world. Brockman, Inc.'s client list of more than 250 authors includes many of the world's leading thinkers.

Brockman arrived in New York in the 60s and saw an opportunity to mix cinema with other art forms. He coined the word "Intermedia" in 1966 (29 year ago!), which appeared as the logo on his stationery and business cards. Working with artists that included Andy Warhol, Robert Rauschenberg, and Claes Oldenburg, he produced two seminal, and now famous and well-documented festivals: "The Expanded Cinema Festival" (1967) at the Film-Maker's Cinematheque, and "Intermedia '68," a series of artistic events he staged at institutions such as The Museum of Modern Art, The Brooklyn Academy of Music, and The Albright Knox Museum in Buffalo.

As a result of these artistic endeavors, in 1967 he was invited to produce what he termed "intermedia kinetic environments" at The New York Film Festival at Lincoln Center (where he served as Director of Special Projects). At that time, he was featured in a page one profile in the *New York Times* Arts section: "Intermedia Kinetic Environments are in. In the places where the action is. John Brockman, the New York Film Festival's 25-year old coordinator of a special events program on independent cinema in the United States, plugging into the switched on 'expanded cinema' world in which a movie is not just a movie, but an Experience, and Event, an Environment. This is the humming electronic world, in which multiple films, tapes, amplifiers, kinetic sculpture, lights, and live dancers or actors are combined to involve Audiences in a Total Theatre Experience."

In 1967, at an airplane hanger on Long Island, he designed "Andy Warhol's World," which ultimately opened under a different name, "Murray the K's World" was the first multimedia discotheque, and was announced to the world on the cover of *Life* . He also worked closely with Warhol in creating a multimedia discotheque environment on New York's Lower East Side which featured *The Velvet Underground* . According *Vogue* It is obvious that men like twenty-six year-old John Brockman will be the arbiters and impresarios who will guide part of industry and education into the tastes and thoughts of this youngest, boldest, and largest of present generations."

Brockman's multimedia projects were covered in two *Life* cover stories that year, and the cover of The *New York Times Magazine*. In 1968 he went to Hollywood to work on the movie *Head* (directed by Bob Rafelson and written by Jack Nicholson) for Columbia Pictures which featured Brockman's head as the centerpiece of a national multi-million dollar advertising campaign. At the age of 28, his innovative career in the arts in full swing, he retired with the comment "my product is fame," upon publication of his first book, *By the Late John Brockman.*

In 1968, he began a writing career while also providing "McLuhanesque" media advice to such diverse client organizations as Scott Paper, General Electric, Metromedia, The Pentagon, The Nixon White House, and Columbia Pictures.

In 1969 he gave "An Intermedia and Environmental Reading of *By The Late John Brockman* at The Poetry Center and the 92nd St. Y in New York. His other book include *37, Afterwords*, and the forthcoming *The Third Culture: Beyond the Scientific Revolution*, the editor of *About Bateson*, and coeditor of *Real Time 1* and *Real Time 2*, and the forthcoming *How Things Are: A Science Tool-Kit for the Brain.*

His early writing was the subject of a book of essays, *After Brockman*, published in 1973, at which time he founded John Brockman Associates, Inc. (now Brockman, Inc.), a literary agency devoted to presenting serious works by important authors to a wide international audience. During this period he also agented and (with Edwin Schlossberg) coauthored a series of mass market books on emerging new technologies which included *The Home Computer Handbook* (Bantam, 1978), the first trade book written and published about the personal computer.

In 1981, he founded The Reality Club. The motto of the Reality Club is "to arrive at the edge of the world's knowledge, seek out the most complex and sophisticated minds, put them in a room together, and have them ask each other the questions they are asking themselves."

Since 1981, The Reality Club has held free-for-all meetings once or twice a month, usually in New York. The evening consists of a one-hour talk or presentation by a speaker to Reality Club members. The talk is followed by lively, challenging, and often impolite discussion. Speakers are charged to represent an idea of reality by describing their creative work, their lives, and the questions they are asking them-

selves— and to share the boundaries of their knowledge and experience.

In selecting speakers The Reality Club looks for people whose exceptional creative work has expanded our notion of who and what we are. The more than 100 speakers have included psychologist Rollo May, Zen master Richard Baker-Roshi, psychologist Mihaly Csikszentmihalyi, computer scientist Danny Hillis, political activist Abbie Hoffman, software designer Mitch Kapor, poet Michael McClure, mathematician Benoit Mandelbrot, neurophysiologist William Calvin, psychologist Roger Schank, cultural historian William Irwin Thompson, essayist Annie Dillard, physicist Freeman Dyson, poet Gerd Stern, energy experts Amory and Hunter Lovins, actor Ellen Burstyn, feminist Betty Friedan, computer scientist Edward Feigenbaum, plant physiologist Rupert Sheldrake, television commentator Hugh Downs, physicist Fritjof Capra, religious historian Elaine Pagels, physicist Heinz Pagels, anthropologist-shaman Michael Harner, physicist Alan Guth, director Richard Foreman, sociologist Sherry Turkle, editor Stewart Brand, and anthropologist Mary Catherine Bateson.

The Reality Club encourages people who can take the materials of the culture in the arts, literature, and science and put them together in their own way. We live in a mass-produced culture where many people, even many established cultural arbiters, limit themselves to secondhand ideas, thoughts, and opinions. The Reality Club consists of individuals who create their own reality and do not accept an ersatz, appropriated reality. Our members are out there doing it rather than talking about and analyzing the people who are doing it.

The Reality Club is different from The Algonquin, The Apostles, The Bloomsbury Group, or The Club, but it offers the same quality of intellectual adventure. The Reality Club is not just a group of people; it is a content stream, the constant shifting of metaphors, the advancement of ideas, the agreement on, and the invention of, reality. Intellectual life is The Reality Club.

The Reality Club was incorporated as the Edge Foundation in 1988.

In 1983, adding a floppy disc next to the book on his logo, he became the first "software agent," and helped pioneer the entry of many New York trade publishers into the computer software and computer book markets. By 1985 he represented 60 software companies and a similar number of computer book authors and packagers.

Brockman, Inc. customers include all the major players in international book publishing and many of the major software companies.

Throughout his various successful endeavors, Brockman has maintained a high public profile. He has been the subject of numerous profiles in the international press which include *The London Times, The Sunday London Times Culture Magazine, The Los Angeles Times, Inc., Venture, Newsweek, Vogue, The New Yorker, The Nation, Life, Manhattan, Inc.,, The Village Voice, Women's Wear Daily,* and *Arts Magazine.*

10

Howard Rheingold
Director, Online Programming Division

Howard Rheingold is the founder and moderator ("host") of the *WELL's* earliest and most successful conferences, and foremost among a small group of hosts who created the social and intellectual architecture of *WELL* culture and governance.

The success of the *WELL* as a leading edge, high-quality, and influential virtual community was due in no small part to Rheingold's ten years of conference "hosting." Rheingold's standing in that community is attested to by his appointment to the *WELL* Board of Directors when the *WELL* was purchased by Bruce Katz in 1994.

In the Spring of 1994, Rheingold was instrumental in persuading the publishers of *Wired* magazine to create *HotWired,* an unprecedented multimedia commercial publication, perhaps the first "online magazine." He is the founding Executive Editor of *HotWired* and one of its principle architects. *HotWired* received over 350,000 hits on its WWW pages the first day it was open. There are over 90,000 subscribers, and 12 sponsors who pay $10,000 per month for interactive advertising linked to *HotWired* pages. For this fee, the advertisers have a banner about 1" wide at the top of a topic page. The user can click on the icon and get more information (an advertisement), or simply leave it. Included in the list of initial advertisers are IBM, MCI, ATT, Club Med, and Volvo.

Rheingold averages three hours a day, six days a week on the World-Wide-Web, the Net, and in the *WELL.* He is extremely knowledgeable about the worldwide culture that has adopted this technology. He also brings with him a large editorial network of digital artists and digital age writers, as well as hard-earned skills at the rare art of online hosting contributed to the success of both the *WELL* and *HotWired.*

Rheingold's unique combination of experiences at the *WELL* and *HotWired* give him unique and valuable expertise at the moment of profound change in this medium—the emergence of new industries that use new kinds of intellectual property and new communication media. In 1995, Rheingold created his own Web site, which has been singled out in the February 7th issue of *USA Today*, which quoted Rheingold extensively about WWW publishing, and printed a reproduction of his page. Electronic syndication of his column, "Tomorrow," has been purchased by the online services of the *San Francisco Examiner, The Minneapolis Star-Tribune,* and the influential WWW publisher, *Global Network Navigator* (O'Reilly Associates).

He is editor in chief of the recently published best-selling *Millennium Whole Earth Catalog*, and author of the best-selling books *Virtual Reality*, and *The Virtual Community* (a "must-read" among savvy leaders in the telecommunication and online services industry; named by *Business Week* as "One of the Ten Best Business Books of the Year"). Hundreds of thousands of copies of his books are in print in eight languages. Rheingold's column about the social impacts of technology, "Tomorrow," is syndicated by King Features and appears weekly in major daily newspapers in Albuquerque, Denver, Detroit, Madison, Minneapolis, New York, Portland, Salt Lake City, San Francisco, Santa Fe, San Francisco, Seattle, and other cities.

As a participant-observer in the design of new technologies, a pioneer, critic and forecaster of technology's impacts, Rheingold is a speaker who involves his audience in an interactive adventure in group futurism. He has spoken about the social and economic impacts of new technologies to: American Library Association, Apple, Canadian Telecommunication Alliance, Dentsu (largest advertising agency in the world), Ford Motor Company, Hakuhodo (Japan's 2nd largest advertising agency), Harvard Graduate School of Design, Nynex, Pacific Bell, and Sprint Telecommunications. In addition he has talked to researchers at Apple, Fujitsu, IBM, Intel, LucasFilms, Paramount, and Phillips.

Stewart McBride
Director, Digital Services Division

Stewart McBride is president and CEO of United Digital Artists. Prior to creating UDA in 1993, McBride was a founding director of Eastman Kodak's legendary Center for Creative Imaging at Camden, Maine. At CCI, the world's first digital arts center, he assembled a faculty of 500 New Media experts to teach more than 4000 artists who attended the workshops. As a founding director, he helped develop a curriculum to educate artists in new imaging and multimedia technologies.

Filmmaker, and two-time Pulitzer Prize nominee, McBride and his work have appeared in the *Atlantic Monthly, Esquire, International Herald Tribune, New York Times Magazine, Sports Illustrated, Washington Post*, and on public radio and television. McBride holds a BA from Princeton University's Woodrow Wilson School and an MA in Politics and Economics from Oxford University.

United Digital Artists Inc. (UDA) is an international New Media agency representing more than 400 artists (photographers, designers, illustrators, animators, writers, and multimedia developers) programmers and consultants engaged in the creation of interactive products, CD-ROM titles, online services, and events.

Headquartered in midtown Manhattan's Citicorp building, UDA runs the Apple Computer New Media Center. Among UDA's other clients are: ABC News, Apple Computer, CNN, HarperCollins, Conde Nast, Hearst New Media, Industrial Light and Magic, LucasArts, MIT Press, MTV, *The New York Times*, Random House, Silicon Graphics, Sony, Time-Warner, *TV Guide*, Viacom New Media and Walt Disney Imagineering. UDA's imaging, design, and multimedia curriculum at the Apple Center in midtown Manhattan represents a rich educational resource covering the full spectrum of the new tools and techniques required to create in the digital media environment.

UDA/Cyperports division, a division of United Digital Artists offers publishers and other companies, one-stop shopping for publishing their content and advertising their company and products on the Internet. With 30 millions users—200 million in the next five years—in 132 countries, the Internet is the world's fastest growing networks of networks. UDA/Cyberports' international system of World Wide Web servers, routers, hubs, and high-speed lines, offers publishers and advertisers an integrated package of services: interacive design and programming, online marketing and promotion, secure credit card transactions, telecommunication and network access and management.

UDA/Cyberports can be seen as an Internet printing house and advertising agency capable of digitizing, designing, and programming content and creating electronic billboards, kiosks, and bookshops filled with customer's products which Internet users can visit to find out about companies and buy their products.

The UDA/Cyberports network sits on the Internet backbone, connected with a high speed data link capable of supporting heavy commercial information traffic. The network is connected to the Metropolitan Fiber System backbone, providing high-speed fiber optic access to many of the large buildings in most major metropolitan areas.

McBride recently implemented UDA ONLINE, an electronic bulletin board linking hundreds of digital artists nationwide. with valuable services, shareware, tips, and techniques and other benefits such as (1) an Internet mailbox and e-mail address; (2) hundreds of internet imaging, design and multimedia conferences; (3) live chats with colleagues and industry experts; (4) the latest versions of imaging and multimedia software; (5) articles and editors in leading industry publications; (5) technical support and product reviews; (7) a gallery of works from distinguished artists.

Roger Schank
Director, Educational and Business Training Products Division

Roger C. Schank has been director of the Institute for the Learning Sciences since it's founding in 1989, as a cooperative venture in educational research by Northwestern University and Andersen Consulting, a member of the Arthur Andersen Worldwide Organization.

Schank, 49, holds three faculty appointments at Northwestern University: John Evans Professor of Electrical Engineering and Computer Science in the Robert R. McCormick School of Engineering and Applied Science. professor of psychology in the College of Arts and Sciences, and professor of education and social policy in The School of Education and Social Policy.

He was professor of computer science and psychology and had been director of The Yale Artificial Intelligence Project at Yale University for 15 years prior to his appointment at Northwestern University. He was first appointed to the Yale faculty in 1974 as associate professor of computer science and became professor of computer science and psychology two years later. He was chairman of the computer science department at Yale from 1990 to 1985 and was director of the Cognitive Science Project at Yale University from 1979 to 1985.

Schank was a visiting professor at the University of Paris VII in 1985-86; he has been a member of the faculty of Stanford University; and he was a research fellow at the Institute for Semantics and Cognition in Castagnola, Switzerland in 1973-74.

Schank was president of Cognitive Systems. Inc.. from 1981-1983. and its chairman of the board from 1983 to 1988, He was president of Compu-Teach, Inc.. from 1982 to 1994, and its chairman of the board. from 1984 to 1989. Both are educational computer software companies.

He was a founding member of the American Association of Artificial Intelligence (AAAI) Fellow program in 1990. Schank was a founder of the Cognitive Science Society in 1979 and a cofounder of the Cognitive Science Journal. He is on the board of editors of eight other journals in psychology, computer science. artificial intelligence and education, including the *Journal of the Learning Sciences.*

One of the world's leading researchers in artificial intelligence, he is the author of more than 123 articles, publications, and 14 books including, *Reading and Understanding: Teaching From an Artificial Intelligence Perspective* (1981), *Dynamic Memory: A Theory of Reminding and Learning in Computers and People* (1982); *Explanation Patterns: Understanding Mechanically and Creatively* (1986): *The Creative Attitude: Learning to Ask and Answer the Right Questions* (1988), with P. Childers: and *Inside Case-Based Reasoning* (1989), with C. Riesbeck.

In one of Schank's more recent books, *Tell Me A Story: A New Look at Real and Artificial Memory* (Scribners, 1990), he argues that story telling and listening are memory processes and valid components of intelligence. He suggests that "intelligent" computers should be able to tell and respond to stories.

Schank was co-editor of the books *Computer Models of Thought and Language* (1973), with K. Colby, and *Inside Computer Understanding: Five Programs Plus Miniatures* (1981), with C. Riesbeck.

He received a bachelor's degree in mathematics from the Carnegie Institute of Technology in 1966, a masters degree in linguistics from the University of Texas in 1967, and a Ph.D. in linguistics from Texas in 1969.

David Shipley
Editorial Director, Online Programming Division

David Shipley, 31, served as executive editor of *The New Republic* from April, 1993 until January, 1995, during which time he also served as acting editor. Prior to that he was editor, *The New York Times* Op-Ed Page from September, 1990 to April, 1993, where he was one of three editors responsible for commissioning and editing opinion articles. From January, 1987 to April, 1993 he was associate editor, Simon & Schuster, specializing in history and politics.

The list of distinguished thinkers and writers he has commissioned articles from, and worked with, over the years, includes: Stephen Ambrose, Carl Bernstein, Stephen Carter, Douglas Copeland, Robertson Davies, Katherine Dunn, Susan Faludi, Timothy Ferris, Spaulding Gray, William Greider, Allan Gurganus, Kitty Kelly, Michael Kinsley, Larry Kramer, Michael Lewis, Alan Lightman, Greil Marcus, Edmund Morris, Charles Murray, Sherwin Nuland, Ben Okri, Richard Preston, Witold Rybczynski, Oliver Sacks, Scott Turow, and Bob Woodward.

Shipley has written for *The New York Times*, *The Washington Monthly*, *The Washington City Paper*, and *The New Republic*. He is currently under contract with William Morrow to write a book about fatherhood. He live in Washington, D.C. with his wife Naomi Wolf, the well-known feminist and author.

Learn Technologies Interactive
(CD-ROM Development Resource)

Learn Technologies Interactive (LTI) is devoted to designing, developing, marketing, and publishing cutting-edge consumer and educational CD-ROMs. Based on the founder' long-term experience in developing school-based interactive multimedia, LTI has the ability to generate titles that demonstrate unique design principles and employ the latest technologies.

Learn Technologies has been in business since July 1, 1993. In November of 1994, LTI received a significant cash investment from Time Warner, Inc. in exchange for a minority equity stake in the company. While the strategic partnership also calls for LTI's development of several contract titles for Time Warner to be published by Time Warner Electronic Publishing, the nature of the relationship is nonexclusive, and LTI has been retained by other companies to develop multimedia titles as well.

Organizationally, LTI is divided into two groups: design, prototyping, and authoring are based in New York City under the direction of Luyen Chou, and C++ engineering and technical supervision are based in Dallas under the direction of LTI's Chief Technical Officer, Nicholas Matelan.

LTI develops its titles both for Macintosh and Windows-based computers. In addition, the product team has significant experience in UNIX and mainframe software development, as well as code management and code testing.

Luyen Chou, President and CEO of LTI graduated magna cum laude, Harvard College, 1989. He formerly served as Director of Operations, The New Laboratory for Teaching and Learning at the Dalton School, New York, N.Y. where he was Manager and Co-Director for the Tishman Family Project in Technology and Education—an ongoing multi-million dollar grant to prototype the school of the future in the context on networked multimedia.

Online Channels

Stewart Brand points out that "no one pays for information retroactively. People will pay for subscriptions. They will also pay for stuff recommended by trusted sources. The Internet is basically free (other than access charges). Newgroups are free. Once you log on you are on you own, very much like cable tv. A moderated discussion is like a gift."

"*HotWired* secures revenues partially by playing at celebrity journalism," he continues, "by packaging an audience for advertisers who are content to head a page with a 1" icon/logo, which if clicked, reveals the advertising message. They run essays by jazzy, famous people full of references that go to real things, really good things and places that relate to the essays. Famousness is the attraction, efficiently handled. Also, you stay in one place and look at one place, unlike other Net activities, such as 'netsurfing' that may lead you to a dead end of a computer in Finland from which there is no return. That is not part of their routine."

In considering ways to package an audience for advertisers, it is necessary to also package the celebrities. What's the piece of them you want to get? Perhaps the answer is little essays with discussion. Value is other similar people keying off each other like a panel. "Brand name" people talking to each other with a few questions asked. This is a straightforward porting of the conference model, in which people may pay hundreds to thousands of dollars to participate in an such an event. But in this model you are have display advertising aimed at the user. Give away content and sell display on the screen with lots behind it.

Potential exists in building communities such as "The Reality Club" founded by John Brockman in 1980, a group of top intellectuals from different disciplines who met regularly to present their work to each other and also to tear each other's ideas apart. Great fun, and great intellectual stimulation. There is potential on the Net for a larger group, for building a giant online Reality Club. Everybody wants to play with kids their own age; everyone of any intelligence would welcome the opportunity to participate in such a community. What is needed is tools that aid community-based conversation and contact. Selling conversation by one body of people to another body of people is a tough sell. In America and England is it often interpreted as class warfare. ("Who do they think they are?"). People gaining access to a community want to be on same level as everyone else in the community. If this is not the case, why bother.

CONTENT.COM plans to create online "channels" targeting a subject or subject area, populated with superstar writers, thinkers, and personalities. We plan to beta test these *Channels* on the Internet and thereby create the initial community of interested participants. Simultaneously, we plan to identify initial sponsors (advertisers) for the channel. Finally, CONTENT.COM plans to offer the products to online service providers on a nonexclusive basis while keeping the option on running its own World-Wide-Web site as well.

The combination of the relationships of the principals of CONTENT.COM will allow for establishing itself as the source, the community to go to for intellectual high-end content whether it be in the sciences, the arts, technology, business, journalism, politics, etc.

Think of it on one level as a magazine publishing conglomerate. For example, a "Third Culture" channel of Brockman's clients and contacts might be analogous to *Scientific American* or *Natural History.* Users subscribe; advertisers advertise. The same plan can be implemented for analogs to existing publications in fashion *(Vogue),* business (*Fortune*), sports (Sports Illustrated), Sexuality (*Playboy*), Computing (*PC Magazine*), etc. But the analogies only go so far. Online is a new medium and other than targeting the same community of interest, CONTENT.COM's plans online activity that is very different, very new.

CONTENT.COM plans to package intellectual property, as a process, a continuous flow of discourse, as well as discrete products such as CD-ROMS and books, create a precise model of how this new kind of media works, and create the interactive qualities—the context—that establishing it as the leading New Media "content-provider."

Let's use John Brockman's idea of a "third culture," as presented in this book *The Third Culture,* as a prototype. The third culture is a community—a community of discourse—not just the brand-name scientists who write, but also the people who read them, talk about the ideas, and discuss them online. This community is as large as the collective readership of Brockman's authors, and the community provides a context which, in itself, is the content.

As a community it represents a model of the thousands of such communities which can be packaged as for advertisers by CONTENT.COM. And there is synergy with CONTENT.COM's plans for interconnectedness with a CD-ROM publishing program (see below) in which video-oriented CD-ROMs become the launching point, the table contents, for a vast interactive database on the NET.

CONTENT.COM plans to invite major corporations to sponsors its "channels." Initially, the content is free to users, who would pay only for online access. In the immediate future, users may also pay for services

such as downloading files or for time spent at certain venues. In this regard, progress has recently been made in the area of payment for real-time online access to content.

For example, Carnegie Mellon University and Visa have formed a partnership for an Internet payment system allowing customers to buy small amounts of information for as little as a penny.

The NetBill system, which will have an initial trial this summer, will enable information such as journal articles, chapters from books, computer software and video clips to be bought and sold on the Internet at relatively low cost. The system has been designed to reduce the cost of making transactions for small amounts of information of a page or less to about one cent for what would currently cost about $0.10.

NetBill will also use encryption techniques to protect against fraud and provide consumer privacy. NetBill customers seeking to buy information will deposit funds into a NetBill account, which will then be drawn upon as the user buys information from the Internet.

The goal of CONTENT.COM is to bring the minds of today's leading edge thinkers and writers in more-or-less direct contact with their audience, within the virtual community of discourse. This is a combination of information: prepublication excerpts from forthcoming books, specially written short essays about aspects of each thinker's work, accompanied by visual design and imagery appropriate for the online medium, specially designed Netlinks to other related sites, and inter-active communication.

The communication aspect also consists of moderated real-time online chats with the thinkers (with transcripts available for later reading), asynchronous discussions about the authors' work and its meaning (like the *WELL* or Usenet or other forums that allow extended group conversations).

For example within the prototype "Third Culture" channel, an ongoing "master tutorial" by world-class scientists is something of value in cyberspace—certainly for a advertising sponsor wishing to reach a wide audience through association with quality content.

Online Classified Advertising/Conversation

CONTENT.COM sees the Internet as the great place to build commercially rich (though massive/cheap) online (a) conversation around (b) classified advertising. All those nanny-seekers will want to talk online about parenting until they're grandparents. Ditto the dog nuts, used-BMW nuts, etc. Consider the possibilities for want ads for career opportunities in academia (*The Chronicle of Higher Education*), in business (*Wall St. Journal*), government, etc. Consider the potential for online personal ads. Consider the possibility for discussions groups associated with these classified ads.

The monopoly of classified advertising is not just the present bread and butter of newspapers and magazines, it's also their best competitive advantage in the online future. The competition to either beat or climb in bed with is the phone companies and their yellow pages.

Bear in mind that Bulletin Board Systems got their big start primarily as sex boards—electric personals. People advertised their gifts, desires, and kinks, and the software helped them sift for matches, and online privacy for direct contact was provided, and the public conferences became a wonderfully convivial (and *educational*) cross between an online party and a co-educational locker room. Sex boards abound now. It is useful to study them. As with a regional teleconferencing systems, they rely ultimately on the prospect (or at least possibility) of face-to-face contact.

Here's how all those previous newspaper videotext debacles went astray: they thought they were selling information. Here's how Prodigy blew a billion dollars: they thought they were selling big-account advertising. Here's how CompuServe and America Online and The *WELL* scored big: they sell their customers to each other.

That's exactly what classifieds do.

CONTENT.COM plans to present a classified service—THE POST—all caps, maybe an acronym, maybe not. The point is, it's the place where you go to *post*.

A users logs into The POST as a shopper (everybody online is a shopper, really—cruising, browsing, nabbing), what do they get to help them shop? First, every ad they see is alive and working; consummated deals expunge their ads immediately. (The modest hourly charge for maintaining an ad encourages quick removal.) Two, the content of any ad may be responsive to the day, the hour, the minute. Three, they may offer levels of depth as they get interested and probe for more information. (Don't count on them being multi-media anytime soon. Have you ever seen Prodigy try to sell a NAPLPS color cartoon of a camera at no discount?)

How does a user find the ads relevant to their needs? Instead of the system having a customer profile (which invades personal privacy obnoxiously), users can define themselves in terms of what they're looking for, specific to each search category of item, their region (if they care), price range, etc., and which of those matter most to them. Then the search engine finds all the relevant ads and lists them in priority order, based on their criteria.

Or they might want to browse—go to a domain (classified, after all) and stroll around. Some people should be there! Some public conferences of people interested in that bunch of stuff—puppy fiends or car fiends or whatever. They'll be nattering away about what's hot and what's not in the ads, and they'll be obsessing merrily about corgis of Miatas or old VWs or whatever. This is the prize. People get on THE POST just to find a nanny, but they linger forever to talk with the other parents about parenting.

Now think about access to the news on the same model.

Online Translation

Another rich source of interactivity is online asynchronous translation. In essence, this opens up content on a new level as an intermediary, a translator, can receive an original document and translate in asychronous time. A user sends an original document to the online translation site during the day. While they sleep in New York, an intermediary sitting on the beach in Australia translates the document, which the user receives back in the morning on a split screen: original and translation. This opens up content on a new level. Discussion can now take place in various languages, translated into other languages. The asynchronous aspect of the Internet makes this feasible. People check e-mail every half-day; they do not expect instant real-time response. Start with academia, and the corporate business community, then branch out. People pay for services in terms of quantity of data processed.

The Digital University
CD-ROM / Online Interface

CONTENT.COM plans to create *The Digital University*, based on a *CD-ROM/Online Interface*. The initial plan is to develop a series of 10 CD-ROMs as *Master Tutorials*. The interconnectedness of the CD-ROM publishing program which is video-oriented, becomes the launching point, the table contents, for a vast interactive text and visual database for the *Online Channels* on the Net.

For the initial *CD-ROM/Online Interface* programs, two pilot areas are targeted: (a) scientists working and writing in such areas as evolution, mind, origin of the human species, cosmology, and language; and (b) notable people in the arts and the humanities.

There are a number of scientists CONTENT.COM plans to invite to participate in the program and around whom the initial five *CD-ROM/Online Interface* products might be built. They include such leading communicators as neuroscientist Colin Blakemore (*The Mind's Brain*), evolutionary biologist Richard Dawkins (*The Blind Watchmaker*), philosopher Daniel C. Dennett (*Consciousness Explained*), particle physicist and Nobel laureate Murray Gell-mann (*The Quark and the Jaguar*), evolutionary biologist Stephen Jay Gould (*Wonderful Life*), computer scientist W. Daniel Hillis (*Why Computers Work*), paleoanthropologist Richard Leakey (*Origins*), biologist Lynn Margulis (*Mystery Dance*), computer scientist Marvin Minsky (*Society of Mind*), psychologist Steven Pinker (*The Language Instinct*), cosmologist Sir Martin Rees (*The Home Planet*), and AI researcher Roger Schank (*Tell Me a Story*). The other five CD-ROM/Online Interface products dealing with subjects in the arts and humanities will follow. The CD-ROMs are planned as concise, attractive master tutorials to the cutting edge ideas in each field.

CONTENT.COM has solicited a proposal from Learn Technologies as the first step in the implementation of this program. At the CD-ROMs' center is an overview of the three or four "hotspots" of debate and excitement in the field. Users address these key issues in three ways: through the *Tutorial*, the *"Interactivities,"* and the " *Background.*" In the process they experience the controversy, engage the problem, and come to their own conclusions.

In the *Tutorial* they probe the authors about their fields. Over an hour of video clips of the subjects are connected by a web of hyperlinks that allow users to construct their own tutorial on the field, jumping quickly from one subject's argument to supporting material from another subject, to a rebuttal from a third.

After exploring the issues through the *Tutorial,* users can investigate the issues through the *"Interactivities":* the experiments, puzzles, and dynamic models that encapsulate the subject's key issues. By playing with the *Interactivities* they engage with the cutting-edge issues themselves and make their own conclusions about the subject's opinions in the *Tutorial.*

At any time, the user can go to the *Background* component to research the controversies further with the fully searchable original text from the relevant texts by the subjects.

The first *Master Tutorial* product, *Evolution,* begins with an overview of the hotspots of evolutionary theory, such the advantage/disadvantage of sexual reproduction, or the logic of altruism. In the *Tutorial,* which is presented by Oxford evolutionary biologist Richard Dawkins, users can interview experts such as Dawkins, John Maynard Smith, Helena Cronin, E.O. Wilson, Lynn Margulis, Stephen J. Gould, and George C. Williams, on their views of these issues. After hearing the different perspectives, they put the theories to the

test in the *Interactivities.* Drawing on computer simulations of evolution such as Dawkins' *Blind Watchmaker* and Conway's *Game of Life,* the *Interactivities* allow experimentation with the implications of the subject's interpretations. For further information, at any time the *Background* section allows the user to search the subject's online texts for more information about the issues.

Currently, the default concept behind CD-ROMs is the expanded book: take an existing text, put it on screen, add some search tools, and imitate the illustrations. The problem with this approach is that the result often doesn't give enough added value to justify the inconvenience of reading on the computer. An activity-based seminar is a more powerful use of the computer's abilities. Also, no one will not pay for old information. The early CD-ROM "expanded books" were "repurposed" products derived from rpinted books by notable authors which had been published years earlier. Their existing audience had already bought the same titles in printed form and saw little need to buy them in the new format.

It is interesting to note that there is a strange imperative that says that every CD-ROM, on whatever subject, must be "entertaining," as though Hollywood had taken over every aspect of intellectual discourse. Hence, "edu-tainment" seems to be a must-label for every product dealing with ideas. This does not work in the marketplace for serious thinking. Readers of the abovementioned scientist-thinkers buy their books for intellectual challenge and the rigors of intellectual exercise. Any form of "edu-tainment" that call attention to itself and draws attention away from the thinkers and their ideas, is off the mark.

The cost for the first CD-ROM in the series is $550,000. This budget includes the development of a core engine, which is also used in subsequent titles, although a fair amount of customization on a title-by-title basis is built into the design so as to make each new CD-ROM a significantly different experience from others in the series. The cost of follow-on CD-ROMs are 25% to 33% less than the original.

At present, the cost of CD-ROM development—from $400,000 to $1,500.000—makes it imperative that the products reach a mass market. CONTENT.COM, recognizing that "distribution is king," has the means to spread development costs among international partners, and thus allow for the targeting of more discreet upscale markets. Through the global marketing of the *Science Masters* (and, more recently, the *Master Classes* book series), John Brockman has demonstrated the ability to create an international marketplace for high-level intellectual properties by placing the series with publishers in 26 languages for distribution in more than 60 countries for publishing advances in the eight figures.

Digital Services

Major publishing companies now have the mandate to "digitize" their "paper-based assets." Once the digitized "books" are in electronic form, then what? A typical publishing conglomerate has a New Media department that consists of someone who once worked at Apple for six months in marketing, and a secretary. Or if they are owned by an entertainment conglomerate, the department might be staffed by a former investment banker, and a secretary. Not exactly the kind of staff required to "re-purpose" books into electronic products, especially when compared with the new media start-ups that already employ hundreds of people. Who, then, is going to transforma backlist that may consist of thousands of newly digitized electronic files into new media products? No publishing company currently has an in-house facility to handle such work.

CONTENT.COM is in a position to provide all the requisite services necessary for publishing and other media companies to "re-purpose" their "paper-based assets" into new media products. In this regard, CONTENT.COM plans to position itself as a nonexclusive resource in the same manner that a printer such as R.R. Donnelly works with nearly all the publishing companies.

Once a paper-based product is digitized, any use involves design, and a successful design is critical for the success of a product. For example, an online front page is not something that lies flat on the electronic page. It is multi-dimensional, and the architecture of the design determines the use, and success, of the resultant product.

CONTENT.COM offers digital design services to publishers which encompass all the needs of the client such as design and implementation of entire electronic product lines on CD-ROM, to creation of a Web pages and online services.

Educational and Business Training Products

CONTENT.COM has access to The Institute for the Learning Sciences' (ILS) Software Tools and Training Courses. ILS is an interdisciplinary research and development center at Northwestern University comprising 160 people, dedicated to transferring advanced educational technologies from the laboratory to practical applications in businesses, schools, government agencies, and the community. Established in 1989 with the founding sponsorship of Andersen Consulting, ILS draws together Northwestern faculty and students from the fields of computer science, psychology, and education, who work with software programmers, graphic

artists, video production personnel to build and test innovative, computer-based multimedia learning environments.

In addition to the sponsorship of Andersen Consulting, the Institute receives financial support from a variety of corporate and government sponsors. The other ILS Corporate Sponsors are Ameritech and North West Water Group PLC. ILS Government Sponsors are Advanced Research Projects Agency (ARPA), Air Force Office of Scientific Research (AFOSR), National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), and Office of Naval Research (ONR). ILS Partnerships are with Encyclopedia Britannica, Hewlett Packard, IBM, Museum of Science & Industry (Chicago), and Xerox.

The Institute for the Learning Sciences is an example of an unusual collaboration between private industry, academia and public schools. The Institute's agreement with its corporate sponsors provides for the transfer of technology and expertise through an internship program in which corporate employees study and work at the Institute. They receive masters-level training and participate with Institute personnel in the development of projects designed to meet their corporate educational needs.

In addition, they have established relationships with local school districts, both in the city of Chicago and neighboring suburbs, for the development, implementation and evaluation of their systems. The Institute hopes to affect a positive change in education by drawing upon and cultivating children's natural penchant to learn through the use of intelligently designed, innovative software.

CONTENT.COM plans to generalize for a wide marketplace the custom software solutions ILS builds for use in businesses and schools. Building high-quality educational software is an expensive, complex, and time-consuming task. To reduce time and expense, ILS builds software tools in parallel with building software applications. ILS's goal is to build tools that are sophisticated yet simple enough that non-computer professionals (teachers, corporate trainers, etc.) can use them to develop content-rich applications. *But what sets ILS apart from other software development houses is that their tools are based on advanced academic research in cognitive science, artificial intelligence, and education.*

When building software and software tools ILS draws upon six teaching architectures, one or more of which may fit a particular project:

1) *Simulation-based learning by doing.* A learning by doing environment is best exemplified by an air flight simulator. Although a marvelous piece of educational software, the flight simulator lacks some key elements. For example, it would help students to have access to videos of teachers commenting on what they had done and answering questions that arose. ILS' simulation carefully indexes videos of experts so that key information is available when necessary.

2) *Incidental learning.* This architecture creates fun and interesting tasks whose end result can be used to impart dull information.

3) *Learning by reflection.* In this architecture teachers adopt the role of sounding boards, allowing students to speculate, wonder, imagine and create. Although computers cannot provide the empathy that humans can, with the proper multimedia software they can serve admirably as sounding boards

4) *Case-based teaching.* Case-based systems tell students exactly what they need to know, when they need to know it. When students learn by doing, they experience knowledge failures, times when they realize they need new information to progress. Case-based teaching provides that knowledge.

5) *Learning by exploring.* An important method of teaching is to answer a students questions at the time they are generated and carry on a conversation, answering follow- up questions. This architectures provides such answers in a conversational format.

6) *Goal directed learning.* To leverage the power of the teaching architectures, students should control the learning environment, taking action when appropriate, receiving instruction on demand, and reflecting on the simulated world's reaction to their efforts. ILS builds software that converts passive learning situation into active ones, and is currently building a family of Goal-Based Scenario (GBS) software tools to produce many application of this architecture.

Some ILS projects include:

1) In partnership with Andersen Consulting ILS built the *Business Practices Course* (BPC). The 40 hour BPC replaced 65 hours of traditional teacher led classroom instruction and paper-based self study at Andersen's Center for Professional Education. BPC provides on demand and just in time guidance and evaluative feedback. Andersen Consulting estimates that BPC saves the firm over $10 million annually in training costs.

2) *Road Trip* teaches geography to grade school students by letting them take simulated car trips around the country. Upon arriving at a destination, students can watch captivating videos spotlighting activities or events in that location. Road Trip appeals to a broad range of students because they get to do something fun: use maps, not just study them.

3) *S2 Trainer,* built for the Army National Guard, allows intelligence officers to interact with simulated staff officers, prepare intelligence reports, and present these reports during briefings. S2 Trainer also pro-

vides an S2 with critiques of his or her decisions, assist in determining how these decisions affected the battle, and how better decisions might be made next time. The software was developed with a sophisticated set of tools developed at ILS, including the GuSS (Guided Social Simulation) tool that creates the overall simulated environment, and the Socratic Tutoring Tool that produces the critiques.

4) For the Museum of Science and Industry in Chicago, Illinois, ILS built as exhibit called *Sickle Cell Counselor*, an active "workbench" exhibit that allows museum visitors to play the role of genetic counselor, conducting simulated lab tests and asking questions of experts. Users studies revealed that visitors spend over ten minutes with the system, and some stay for longer than 30 minutes, where more typical museum exhibits may engage visitors for about two minutes.

Financing

CONTENT.COM plans to begin business operations by establishing itself from the outset as the dominant New Media company. In this regard, companies in cable, telecommunications, television, movies, publishing, computer hardware, and software, are being offered an opportunity to become partners in this exciting adventure. The initial investment for each partner is $10,000,000. The number of investors is limited to 6 companies.

CONTENT.COM, INC.

Enclosed is the beta version of our first softwear.
As a member of our Board of Advisors, please try it
out and advise. -John Brockman and David Bunnell

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President and CEO
David Bunnell
Chairman
John Brockman

CONTENT.COM, INC. / BOARD OF ADVISORS

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Cofounder, Electronic Frontier Foundation; lyricist, *The Grateful Dead*
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~~Founder~~ ~~Chairman,~~ Electronic Frontier Foundation
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Executive, Creative Artists Agency; former CEO of AT&T's multimedia business
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Founding Director, Center for Creative Imaging; founder, United Digital Artists
Marvin Minsky, Chairman
MIT computer scientist; Artificial Intelligence pioneer; author, *Society of Mind*
Tim O'Reilly
Founder & President, O'Reilly & Associates; Internet publisher & pioneer
Howard Rheingold
Founding Executive Editor of *HotWired*; Author, *Virtual Communities* & *Virtual Reality*
Roger Schank
Artificial Intelligence expert; Director, Institute for the Learning Sciences, Northwestern
Tsutomu Shimomura
Physicist; Computer security expert, San Diego Supercomputer Center
Clifford Stoll
Astrophysicist; "The God of the Internet;" Author, *The Cuckoo's Egg* & *Silicon Snake Oil*
Sherry Turkle
MIT Sociologist; Author, *Life on the Screen: Identity in the Age of the Internet*
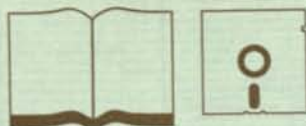
CONTENT.COM, INC. / FINANCIAL ADVISOR

Allen & Co., Inc.

Dear Esther,
I'm off to Europe but
Won't mention you
until we get your ok.
Give Katinka a call
at your convenience
JB

John Brockman
Chairman & CEO

January 12, 1995

Esther Dyson
EDventure Holdings Inc.
104 Fifth Ave, 20th Fl
New York, NY 10011-6987

BY HAND

Dear Esther:

RE: *Master Classes*

I am writing to you to explore the possibility of your participating in *Master Classes*, an
ambitious multimedia encyclopedia designed to convey the history and achievements of the
human race from a new perspective. *Master Classes* will involve the participation of 60
distinguished authors in the arts, humanities, and social sciences who will be asked to write
40,000 word extended essays in which they present their essential ideas to the educated,
intelligent, and busy reader.

The idea for *Master Classes* is one I have developed with Anthony Cheetham, Chairman of
The Orion Publishing Group in London, who has commissioned Brockman, Inc. to put the
project together. In the past few years Cheetham has, through Orion's acquisition of
Weidenfeld & Nicholson and J.M. Dent, acquired two well-known encyclopedias: *The
World University Library*, published by Weidenfeld and the 12-volume *The Everyman's
Encyclopedia*, published by Dent. In considering how to revamp these encyclopedias for
contemporary readers, he sensed an opportunity to do something different, something new
and exciting.

Let us suppose that we wanted to convey the history and the achievements of the human race
from the perspective of a world citizen at the end of the second millennium. We would think
first, perhaps, of a large scale encyclopedia, as the French Encyclopedists did at the end of
the 18th Century. But an encyclopedia is first and foremost a data bank in which
information overwhelms interpretation. It has no space for individual style, for digression,
for humor or for wisdom.

Master Classes is an encyclopedic project for our times which will present the essays in multimedia formats including cd-rom, on-line, audio, and print (as a library of 60 volumes). The success of the project lies in the pairing of subject and author. The subjects must pinpoint the themes which give meaning to history. The authors will bring to their themes not just the knowledge of the scholar but also the personal insights and perspectives which bring a text to life in a way that no encyclopedia entry can match. They will be encouraged to share with readers the fruits of their thinking and the excitement they have experienced on the road to discovery.

Brockman, Inc. is commissioning each essay for an advance of $60,000 for an exclusive license to all rights. Authors retain copyright to the essay and also share in the proceeds. The advance is against fifty percent of net income from the disposition of the rights in the essay.

The concept for *Master Classes* is to some extent based on an earlier concept which Brockman, Inc. developed with The Orion Publishing Group called *Science Masters*, a series of essays by distinguished scientists which is being translated into 26 languages and published in more than 50 countries. (Please see the enclosed information.) We expect that *Master Classes* will be taken up as eagerly by the international publishing community, and we expect global coverage.

Please let me know if you are interested in discussing this further.

Sincerely yours,

John Brockman

JB:ka
encls.

cc: Anthony Cheetham
    Chairman, The Orion Publishing Group

THE ORION PUBLISHING GROUP LTD

ORION HOUSE
UPPER ST MARTIN'S LANE, LONDON WC2H 9EA
TELEPHONE 071 240 3444   FAX 071 240 4822

November 7, 1994

John Brockman Esq
Brockman, Inc.
5 East 59th Street
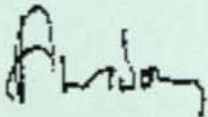New York
NY 10022

Dear John,

MASTER CLASSES

Following the successful launch of SCIENCE MASTERS both here and in the United States I feel that the time has come to move on to the second and more ambitious stage of our project which is to make a firm decision on the commissioning of essays for the MASTER CLASSES series.

We see the essays as the first stepping stone in a multimedia venture which will be made available in a number of different formats, both printed and electronic, throughout the world. I am confident that, provided we can interest the authors you and I have discussed in taking part, this project will enjoy an even wider international appeal than has been the case with SCIENCE MASTERS.

I am therefore writing to confirm Orion's formal approval for commissioning sixty essays for the MASTER CLASSES, and to ask you to seek a similar approval from all our other publishing partners around the world. I understand that HarperCollins/Basic Books have already given you a commitment for the USA, as well as Bertelsmann in Germany, and Rizzoli in Italy, which makes a most encouraging start.

With best wishes.

Yours,

Anthony Cheetham

BasicBooks
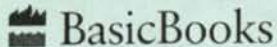
October 24, 1994

John Brockman
John Brockman, Inc.
5 East 59th St.
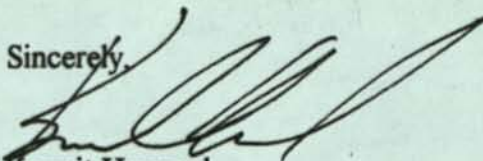New York, NY 10024

Dear John:

MASTER CLASSES

I'm pleased that we are going to put this series together. I'm convinced that with the right final list of authors and topics this is a project that can come together in the superb way Science Masters has. The balance of widely known individuals and fascinating newer faces on the scene should make for an exciting mix.
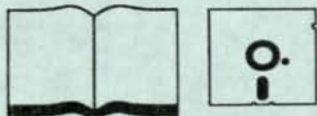
I also think that the internationalization of the series will give it a dimension (as with Science Masters) that will make it unique in this kind of publishing.

I'm looking forward to the news of who looks to be on board with us.

Sincerely,

Kermit Hummel
President & Publisher

Brockman, Inc.   5 East 59th Street   New York, New York 10022   Tel (212) 935-8900   Fax (212) 935-5535

John Brockman
Chairman & CEO

MASTER CLASSES

Master Classes is an ambitious multimedia encyclopedia designed to convey the history and achievements of the human race from a new perspective. *Master Classes* will involve the participation of 60 distinguished authors in the arts, humanities, and social sciences, and will appear in various media formats: cd-rom, on-line, audio, books, etc. The idea for *Master Classes* is one I have developed with Anthony Cheetham Chairman of The Orion Publishing Group in London who has commissioned Brockman, Inc. to put project together.

Let us suppose that we wanted to convey the history and the achievements of the human race from the perspective of a world citizen at the end of the second millennium. We would think first, perhaps, of a large scale encyclopedia, as the French Encyclopedists did at the end of the 18th Century. But an encyclopedia is first and foremost a data bank in which information overwhelms interpretation. It has no space for individual style, for digression, for humor or for wisdom.

Master Classes is an encyclopedic project for our times, which will present the essays in multimedia formats including cd-rom, on-line, audio, and print (as a library of 60 volumes). The success of the project lies in the pairing of subject and author. The subjects must pinpoint the themes which give meaning to history. The authors will bring to their themes not just the learning of the scholar but also the personal insights and perspectives which bring a text to life in a way that no encyclopedia entry can match. They will be encouraged to share with the reader the fruits of their thinking, and the excitement they have experienced on the road to discovery.

The authors are being asked to write 40,000 word extended essays in which they present their essential ideas to the educated, intelligent, and busy reader. Illustrations will be minimal (a few b&w line drawings). The delivery schedule is 12 titles per year beginning in 18 months (July 31, 1996). Publishers will commit for the entire 60-book series with separate accounting for each book and pay an initial publishing advance on signing for the first 24 titles. Additional advances per book will become payable when Orion and the U.S. publisher accept our proposals for new titles.

The concept for *Master Classes* is to some extent based on an earlier concept which Brockman, Inc. developed with The Orion Publishing Group called *Science Masters*, a series of essays by distinguished scientists which will be translated into 26 languages and published in more than 50 countries. We expect that *Master Classes* will be taken up as eagerly by the international publishing community, and we expect global coverage.

john@brockman.com

MASTER CLASSES:

PROPOSED LIST

(CONFIDENTIAL)

Over the past two months, Brockman, Inc. has been in discussion with a wide range of scholars, thinkers, and writers whom we have invited to participate in *Master Classes* by contributing books to the initial group of 24 titles. The following authors have either agreed to take part in the series or are in discussion with us. Many other authors will be approached in the months to come.

√ Stewart Brand
√ Mihalyi Csikzentmihalyi
√ Don Cupitt
√ Howard Gardner
√ David Gelernter
√ Ernest Gellner
√ Nicholas Humphrey
John Keegan
Bernard Lewis
√ John Maddox
√ Elaine Pagels
√ Seymour Papert
Edward Said
Simon Schama
√ John Searle
√ Dimitri Simes
√ Dan Sperber & Deirdre Wilson
√ George Steiner
Hugh Thomas
√ Sherry Turkle
√ Robert Venturi & Denise Scott Brown
Michael Walzer
√ Bernard Williams

(√ denotes authors who have already agreed to participate)

Stewart Brand | *Untitled On The Future*

I think that some of the argument for a global interest in "futurity" might be...... Millennial interest in the long term. 1,000 years, what's that? Major problems driven by excessive focus on the short term—and the spread of market economies and democracies, interestingly, exacerbates the situation, since both markets and democracies gain all their juice from being so quick and so focussed on immediate problems and opportunities. Accelerating technology, which keeps changing the rules of all the games. Widespread fear of the future (among the corporations we deal with, globally, you would think the motto is "Progress is our most important enemy.") Soon enough, though, we may well get a mood swing to infatuation with the future—which could have its own problems. Environmental and "sustainability" issues continue to grow in importance. How one treats the future is their essence, and it's uniformly confused these days, even among environmentalists.

Stewart Brand, founder of *The Whole Earth Catalog* and author of *The Media Lab* and *How Buildings Learn*, is, according to a recent cover story in *The Los Angeles Times Magazine*, "always two steps ahead of others.....(he) is the least recognized, most influential thinker in America."

Re: *The Media Lab*
"The work of a first-class investigative reporter with lots of savvy."
—*New Scientist*

"An incisive and entertaining introduction to one of the intellectual powerhouses of our high industrial culture."
— *San Francisco Chronicle*

Mihalyi Csikszentmihalyi | *Untitled On Happiness*

Based primarily on his research since *Flow* and *The Evolving Self*, this book will deal with such themes as the evolutionary significance of happiness, happiness and civilization, materialism and happiness, the happiness of children, happiness and optimal performance and the future of happiness.

Mihaly Csikszentmihalyi (pronounced "chick-SENT-me high") a Hungarian-born polymath and professor of psychology and education at the University of Chicago, has been thinking about the meaning of happiness since a child in wartime Europe. He is the author of two popular books about his theories, the best-selling *Flow: The Psychology of Optimal Experience*, and *The Evolving Self: A Psychology For The Third Millennium*.

Re: *Flow*
"*Flow* is important..The way to happiness lies not in mindless hedonism, but in mindful challenge."
—*The New York Times*

"*Flow* documents a set of scientific discoveries about human nature that actually illuminate the life experiences of all persons...a profound and pathbreaking book."
— Howard Gardner

Don Cupitt — *Untitled on Religion and Culture*

This book will be a systematic statement of my own views as well as an account about the subject of religion and culture since the Enlightenment.

Don Cupitt has held a wide variety of College and University appointments and has lectured over most areas in the philosophy of religion, ethics and Christian ethics, and religious studies. He is a Fellow of Emmanuel College, Cambridge and Director of Studies in Philosophy and Theology. His books include *The Time Being*, *Creation Out of Nothing, The New Christian Ethics, The Sea of Faith* (also a BBC TV series) , and *What is a Story?*

Re: *The Sea of Faith*

"It will confirm his position as the most provocative — and one of the most entertaining — of writers on religious themes in Britain; and as the one who is trying hardest to adapt Christianity so that it becomes meaningful again to a modern skeptical intellectual."

—The Times

Re: *After All: Religion Without Alienation*

"Don Cupitt is a hugely energetic thinker with a missionary zeal to reach others. He has a gospel to proclaim, and it is a gospel of human freedom in the face of cosmic indifference. Since he took leave of God (in about 1980), his writing has become more vigorous, witty, and poetic with every book."

— Church Times

Howard Gardner — *Untitled on Ordinary And Extraordinary Minds*

This book is a personal statement about what is known about the human mind. I have been studying the mind in its various facets for thirty years, and have written 15 books on the subject, including 9 books which include the word "mind" in the title. While the book will be a distillation of my thinking over the years, the particular slant of the proposed book is novel. I will describe what we know about the development and functioning of the mind in normal individuals and in extraordinary individuals. Included among the extraordinary individuals are persons studied in three of my books: intelligent persons (as in *Frames Of Mind*); creative persons (as in *Creating Minds*); and outstanding leaders (as in my forthcoming *Leading Minds*). Rather than having two kinds of models, one for extraordinary human beings, the other (so to speak) for the rest of us mortals, I introduce a way of thinking about mind and culture which can encompass the full range of human achievement.

Howard Gardner is Professor of Education at Harvard University and holds research appointments at the Boston Veteran's Administration Medical Center and Boston University School of Medicine. His numerous books include *Frames of Mind, The Mind's New Science: A History of the Cognitive Revolution,* and *To Open Minds.*

Re: *Creating Minds*

"In *Creating Minds,* Gardner joins a small cadre of scholars offering evidence that one *can* characterize genius."

— Newsweek

"Gardner may well have uncovered some fundamental aspects of the creative personality and of the process of creativity. His discussion will inevitably open up more of this fascinating territory."

— New Scientist

Ernest Gellner | *Untitled on Theories of Society*

The events of 1989/91 have changed not only the political way of Europe, but also the conceptual and ideological map. The division of Europe into a liberal capitalist world and a Communist one, which at one time seemed to have the same permanence as the older splits into Catholic/Orthodox, and later Catholic/Protestant worlds, has suddenly been abolished. This has undermined not only the losing ideology of Marxism, but in a curious way, also the winning and unformalised ideology of liberalism. Some have hailed the situation as the "end of history," but the idea that now everything is agreed, and that there are no further disputes, is itself absurd.

Ernest Gellner, former Professor of Philosophy at the London School of Economics and Political Science, and professor of social anthropology at Cambridge University, is now Director of the Center for the study of Nationalism at the Central European University in Prague. He is the author of over a dozen books including *Words and Things, Thoughts and Change, Nations and Nationalism , Culture, Identity , and Politics* and most recently *Conditions of Liberty.*

Re: *Nations and Nationalism*
"Periodically, an important book emerges that makes us, through the uniqueness of its theory, perceive history as we have not seen it before. Ernest Gellner has written such a volume."
— *American Historical Review*
"A better explanation than anyone else has yet offered of why nationalism is such a prominent principle of political legitimacy today..."
— *Times Literary Supplement*

David Gelernter | *Untitled on Science and Art*

Science and art used to be allies. They are long since divorced; the fault lies on both sides. The problems arising from the divorce transcend the cultural ones Snow discussed decades ago. I'll briefly sketch two different scenes, one in which science and art thrive together (the late 30's U.S.), and the contemporary scene in which they have nothing to do with each other. I'll then discuss scientific ventures that are floundering because science is ignorant of art: the ongoing attempt to understand thought and the mind is the most important example. Poets not scientists turn out to have gathered the best raw material to feed a science of mind and human personality. (Freud knew it; we've forgotten it). Scientists tend not to know what poets know; because they don't they have blundered into a science of mind that profoundly misunderstands personality and emotion. Art has suffered at least as badly— not for lack of overtly scientific or technological subject matter; rather because science and technology define today's intellectual center of gravity. When art is ignored at the center, it feels (and is) unloved and discarded. It reacts with the bitter and unlovely nihilism that has brought it to today's low ebb.

David Gelernter, an associate professor of computer science at Yale University, is a leading figure in the third generation of Artificial Intelligence scientists. As a graduate student Gelernter wrote a landmark programming language called Linda that made it possible to link computers together to work on a single problem. He has since emerged as one of the seminal thinkers in the field known as parallel, or distributed, computing. He is the author of *Mirror Worlds : The Muse in the Machine: Computerizing the Poetry of Human Thought,* and most recently *1939: The Lost World of the Fair.*

Re: *Mirror Worlds*
"....a highly edifying book on the whole world of computers. For anyone who has wondered what the next stage of the computer revolution will be like and how it will enrich our lives. . . *Mirror Worlds* offers some answers."
—*The New York Times*

Nicholas Humphrey — *Untitled on Human Nature and Evolutionary Psychology*

The late twentieth century has seen the re-emergence of human nature as a topic for serious debate and speculation. The discoveries of sociobiology and anthropology have forced cognitive scientists to recognise the extent to which the characteristics of the human mind have been shaped by natural selection. A new understanding is emerging of how "typically human" ways of thinking and feeling—with their specific strengths and weaknesses —can be traced to the requirements of life, especially social life, in the long distant past. Much of this new thinking derives from my own theoretical writings, especially my book *Consciousness Regained*.

Nicholas Humphrey, a Senior Research Fellow at Darwin College, Cambridge, is a distinguished theoretical psychologist who is well known as a writer and documentary maker whose work includes the famous Bronowski Memorial Lecture on nuclear weapons: "Four Minutes to Midnight," and books such as *Consciousness Regained, The Inner Eye,* and *A History of the Mind,* winner of the first annual British Psychology Society Book Award. His interests are wide ranging: he studied mountain gorillas with Dian Fossey in Rwanda, has made important discoveries about the brain mechanisms underlying vision, proposed the now celebrated theory of the "social function of human intellect," and is the only scientist ever to edit the literary journal *Granta*.

Re: *A History of the Mind*
"...readable and entertaining, a stimulating introduction to an ancient and honorable puzzle."
—*The New York Times*
" ...exceptionally readable, and packed with fascinating psychological information and ingenious speculation..."
— *The Guardian*

John Keegan — *Untitled on Warfare*

• **Description to Come** •

John Keegan was for many years senior lecturer in military history at the Royal Military Academy, Sandhurst, and is now defense editor of the *Daily Telegraph* in London. He is the author or co-author of nine previous books including *The Faith of Battle, Four Arms in Normandy,* and his most recent, *A History of Warfare.*

Re: *A History of Warfare*
"Perhaps the most remarkable study of warfare that has yet been written"
—*The New York Times Book Review*
"A masterpiece. . .this is one of those rare books which could still be required reading in its field a hundred years from now."
—*The New Yorker*

Bernard Lewis   *Untitled On The Islamic View Of Europe*

• Description to Come •

Bernard Lewis, the world's leading authority on Islam, is Director of the Annenberg Research Institute, Philadelphia, and Cleveland E. Dodge Professor of Near Eastern Studies Emeritus at Princeton University. He is the author of *The Arabs in History*, *The Muslim Discovery of Europe*, and *The Assassins*, among other books about the Middle East.

Re: *The Assassins*
"Learned, lucid and elegant..with great skill Lewis disentangles truth from legend."
—*The Economist*
"Excellently accurate...Professor Lewis has succeeded with his usual carefulness, probity, and skill."
—*Times Literary Supplement*

John Maddox   *Untitled On The History Of The Universe*

• Description to Come •

John Maddox has been Editor of *Nature* twice — first from 1966 to 1973 and again since 1980. After six years as Assistant Lecturer and then Lecturer in Theoretical Physics at the University of Manchester, he became Science Correspondent of *The Guardian* in 1955. He occupies a unique place in today's culture. He has managed to build *Nature* into the premier publication of its kind, while still retaining the respect of the international science community for his intellect and writing. Among his books are (with Leonard Beaton) *The Spread of Nuclear Weapons*, *Revolution in Biology*, *The Doomsday Syndrome*, and *Beyond the Energy Crisis*. He is currently writing a book entitled *What Remains to be Discovered*.

Elaine Pagels   *Untitled On Early Christianity*

• Description to Come •

Elaine H. Pagels is the Harrington Spear Paine Professor of Religion at Princeton University. She is the author of highly acclaimed best-seller *The Gnostic Gospels*, which won the National Book Award and the National Book Critics Circle Award, *Adam, Eve, and the Serpent*, and *The Origin of Satan* (forthcoming). Pagels was one of the first people to win a MacArthur Fellowship Award.

Re: *The Gnostic Gospels*
"An intellectually elegant, concise study...the economy with which she evokes the world of early Christianity is a marvel."
—*The New Yorker*
"The first major and eminently readable book on gnosticism .."
— *The New York Times Book Review*

Seymour Papert · Untitled on Effect of Computers on Learning

• Description to Come •

Seymour Papert, the creator of Logo, holds the Lego Chair for Learning Research at MIT where he is also co-founder of the Artificial Intelligence and Media Laboratories. He is the author of *Mindstorms: Children, Computers and Powerful Ideas.* the book that started the computer revolution in schools, and *The Children's Machine: Rethinking School in the Age of the Computer.*

Re: *Mindstorms*

"Seymour Papert is the greatest of all living education theorists."
— Marvin Minsky

"..offers one of the most promising glimpses yet of how we might build toward an educational system in which we could take renewed pride."
— *The New York Times Book Review*

Edward Said · Untitled on Culture

• Description to Come •

An internationally renowned literary and cultural critic, Edward W. Said is University Professor at Columbia University. He is the author of ten previous books, including *Orientalism,* which was nominated for the National Book Critics Circle Award, and *Culture and Imperialism.*

Re: *Culture and Imperialism*

"Grandly conceived. . .urgently written and urgently needed. . . .No one studying the relations between the metropolitan West and the decolonizing world can ignore Mr. Said's work"
—*The New York Times Book Review*

"Illuminating. . .consistently provocative. . .Mr. Said's assessments of individual novels evince enormous erudition and a genuine passion for literature."
—*The New York Times*

"Edward W. Said is a calm voice amid the din of the culture wars. . .a stimulating guide across the intellectual minefields of contemporary literary criticism."
—*Chicago Tribune*

Simon Schama | *Untitled on History*

• Description to Come •

Simon Schama studied history at Cambridge University, where from 1966 to 1976 he was a fellow of Christ's College. He is now Mellon Professor in the Social Sciences and Senior Associate at the Center for European Studies at Harvard University. He is the author of *Dead Certainties, (Unwarranted Speculation), Citizens: A Chronicle of the French Revolution,* and *Patriots and Liberators: Revolution in the Netherlands 1780-1813,* among others.

Re: *Citizens: A Chronicle of the French Revolution*
"An exuberant new epic history. . .a work of rare brilliance."
—Newsweek

"Dazzling. . .stimulating. . .This is no ordinary book. . .Schama does not merely write brilliantly about people, about events, about the use or abuse of rhetoric, and about festivals and executions. He also begins his chronicle with a dramatic burst of poetic imagination. . . . The very great virtues of the book [lie] in the coruscating brilliance of Schama's style, his dazzling display of erudition and intelligence. . . . His chronicle is, after all, a stunningly virtuoso performance."
—The New Republic

"One of the best books of the decade."
—Time

"Monumental, like the great 19th-century narratives it emulates, makes entertainment and erudition work hand in hand . . . As no other recent historian of the revolution, Schama brings to life the excitement--and harrowing terror--of an epochal human event."
—The New York Times Book Review

John Searle | *Untitled on How the Mind Works*

There are three elements necessary to understanding the operation of the mind: consciousness, intentionality and the emotions. This book presents a theory that unifies all three into a single coherent theory. It draws heavily on my earlier works.

John R. Searle, recognized as one of the important philosophers of our time, is the Mills Professor of the Philosophy of Mind and Language at the University of California, Berkeley and author of *The Rediscovery of the Mind; Minds, Brains and Science: The 1984 Reith Lectures,, Intentionality: An Essay in the Philosophy of Mind* , and the forthcoming *The Construction of Social Reality* .

Re: *The Rediscovery of the Mind*
". . .a lucid critical survey of the different views now circulating about the relation of the mind to the body. . . .The Rediscovery of the Mind is trenchant, aggressive, and beautifully clear, in Searle's best 'What is all this nonsense?' style. As an antidote to one of the dominant illusions of our age, it deserves a wide audience.
—The New York Review of Books

Dimitri Simes   *Untitled on Russia and the West*

Few events in history had such a profound impact on the world and came as unexpectedly as the collapse of the Soviet empire. My book will examine the new Russia in all it's rich and contradictory dimensions, paying particular attention to its impact on relations with the West.

Dimitri Simes, who emigrated from the Soviet Union in 1973, is a leading prognosticator in the U.S. on the Russian government. He recently became President of the Nixon Center for Peace and Freedom, a bi-partisan Washington think tank. He is a consultant to the national intelligence council at the CIA. He is also Vice Chairman of the Fund for Democracy and Development, a Fellow of the World Economic Forum in Geneva, a Special Correspondent for *Newsday*, a commentator for Voice of America and a columnist for *Moscow News*. Simes has authored and co-authored two essay length books, *Detente and Conflict: Soviet Foreign Policy 1972-1977* and *Soviet Succession: Leadership in Transition*. Simes' articles have appeared in *The New York Times, The Washington Post, Foreign Affairs, Foreign Policy*, among others.

Dan Sperber & Deirdre Wilson   *Untitled on Human Communication*

The study of human communication has undergone radical changes in the past twenty years under the influence of the "cognitive revolution," that is, the joining of forces of psychology, neurology and Artificial Intelligence aimed at discovering the natural mechanisms of perception, thought, and action. Relevance Theory, the most elaborate , influential, and controversial cognitive approach to human communication was developed by Sperber and Wilson. Despite the scientific and academic success of Relevance Theory, the theory has not yet been introduced to a wide readership. The basic ideas of Relevance Theory are simple and powerful, and capable of providing non-specialists with novel insights into their own experience as everyday communicators. The main goal of the volume will be to help intelligent lay readers rethink communication in the light of the cognitive science approach.

Dan Sperber , a French anthropologist, was educated at the Sorbonne and Oxford. He has held a research position at the Centre National de la Research in Paris since the beginning of his career. He has also been visiting fellow at St. John's College, Cambridge; the Van Leer Institute, Jerusalem; the Institute for Advance Study, Princeton; the British Academy, London; and visiting professor, Princeton University, the London School of Economics, and the University of Michigan, Ann Arbor. He is the author of *Rethinking Symbolism* and *On Anthropological Knowledge*. Deirdre Wilson, a British linguist, has been a lecturer in Philosophy at Somerville College Oxford, a Harkness Fellow at MIT, LSA Professor at the Los Angeles Summer Institute of Theoretical Linguistics at University College London, and a fellow of the British Academy. She is the author of *Presuppositions and non-truth-conditional semantics*, and *Modern Linguistics*. Sperber and Wilson are co-authors of *Relevance: Communication and Cognition*.

Re: *Rethinking Symbolism*
"It is short; it is lucid; it is elegant; it is witty; it is concerned with a theme that is central to current interests...It is also very ambitious"
—*Times Literary Supplement*

| George Steiner | *Untitled Brief History of the Book and Its Future* |

• Description to Come •

George Steiner is Extraordinary Fellow of Churchill College, Cambridge, and Professor of English and Comparative Literature at the University of Geneva. He is the author of the modern classic *After Babel*, as well as *Real Presences, Language and Silence*, and The Death of Tragedy.

Re: *Real Presences*

"A new book by George Steiner is always an event."
—*The New York Times*

"George Steiner is a dazzling rhetorician. Reading him gives you some idea of what it must have been like, as a child in the pre-cinema era, to attend your first magic-lantern show."
—*London Sunday Times*

"Proof anew that Steiner must be the last of what a more civilized age called 'men of letters.'"
—*Chicago Tribune*

| Hugh Thomas | *Untitled on Spanish Civilization* |

• Description to Come •

Hugh Thomas was Professor of History at the University of Reading from 1966 to 1976 . From 1979 to 1989 he was Chairman of the Centre for Policy Studies. In 1981 he was created a Life Peer. He is the author of *The Spanish Civil War*, which won the Somerset Maugham Prize, *An Unfinished History of the World* which won the Arts Councils prize for history in 1980 in its National Book Awards, and *Conquest: Montezuma, Cortes and the Fall of Old Mexico*, chosen as a book of the year by *The New York Times*. His most recent appointment is as King Juan Carlos Professor of Spanish Civilization at New York University.

Re: *The Spanish Civil War*

"Mr. Thomas has understood the Spanish Civil War incredibly well and has written about it superbly...A full, vivid and deeply serious treatment of a great subject."
— *The New York Times Book Review*

| Sherry Turkle | *Untitled on Identity and the Internet* |

• Description to Come •

Sherry Turkle is Professor of the Sociology of Sciences and the Massachusetts Institute of Technology and a licensed clinical psychologist. She has written numerous articles on psychoanalysis and culture and on the "subjective side" of people's relationships with technology, especially computers. Her work on computers and people has been widely written about in both academic and popular press, including *Time, Newsweek*, and *US News and World Report*, and she has spoken about the psychological and cultural impact of the computer as a guest on numerous radio and television shows. She is the author of *Psychoanalytic Politics: Jacques Lacan and Freud's French Revolution* and *The Second Self: Computers and the Human Spirit*.

Re: *The Second Self*

".....combines rigorous academic discipline with a sympathetic, even playful, imagination."
—*The New York Times*

"Anyone who wishes to know about the effects of computers on American society today would do well to read The Second Self. "
—*The New York Times Book Review*

| Robert Venturi & Denise Scott Brown | *Untitled on Architecture* |

• Description to Come •

Robert Venturi is a world-renowned architect and the author of two pivotal books of architectural theory, *Complexity and Contradiction in Architecture*, and *Learning from Las Vegas*, with Denise Scott Brown and Steven Izenour. He has taught at Yale University and the University of Pennsylvania and was a Fellow and later Architect in Residence at the American Academy in Rome.

Re: *Complexity and Contradiction in Architecture*
"The most important writing on the making of architecture since Le Corbusier's *Vers une Architecture*, of 1923."
—Vincent Scully

| Michael Walzer | *Untitled on War-Making* |

• Description to Come •

Michael Walzer is Professor of Social Science at the Institute for Advanced Study and the author of many books including the classic work *Just and Unjust Wars,, Spheres of Justice Exodus and Revolution* and *The Company of Critics..*

Re: *Just and Unjust Wars*
"A magnificent book, an honor to its writer."
— *The New York Review of Books*
"A clear, humane and startlingly original survey of the moral issues that complicate modern war-making."
— *Atlantic Monthly*

| Bernard Williams | *Untitled on Morality* |

• Description to Come •

Bernard Williams is White's Professor of Moral Philosophy, Oxford, and Deutsch Professor of Philosophy, University of California at Berkeley. He is the author of *Ethics and the Limits of Philosophy, Moral Luck,* and *Shame and Necessity.*

Re: *Shame and Necessity*
"Brilliant, demanding, disturbing."
—*The New York Review of Books*
"A dazzlingly clever and agile assault. . . .Williams's treatment of shame is brilliant. . . .In places this is a difficult book, but always because the argument requires it; essentially, it is a model of philosophical lucidity."
—*The New York Times Book Review*

**NEWS
from
Brockman, Inc.**

BROCKMAN ANNOUNCES *MASTER CLASSES*™

60-BOOK LIBRARY TO CONVEY THE HISTORY AND ACHIEVEMENTS

OF THE HUMAN RACE FROM A NEW PERSPECTIVE

An ambitious new book project, designed to convey the history and achievements of the human race from new perspective, was announced today by John Brockman, Chairman and CEO of Brockman, Inc., the agent and proprietor of the series, which originated in collaboration with Anthony Cheetham, Chairman of The Orion Publishing Group in London. The same team originated the *SCIENCE MASTERS*™ series, acquired by publishers in 26 countries.

The new project, under the heading *MASTER CLASSES*™ , is planned as a 60-volume library to appear at the rate of 12 titles annually from fall 1996 through the year 2000. Each volume will consist of a 40,000-word essay by an leading thinker, writer, artist, or researcher with a record of having written successfully for the general public. Main subject areas are society; philosophy, politics & psychology; language & literature; art & civilization; natural history; science; and history.

Publishers around the world have responded to *MASTER CLASSES*™ with rare enthusiasm. According to Brockman, although none of the authors or titles have yet been announced, rights deals are being negotiated in all the major markets.

RIGHTS

BY PAUL NATHAN

Feast of Knowledge It would be hard to imagine a more ambitious book project than one currently being developed by agent John Brockman and Anthony Cheetham, the head of Orion Publishing in London. The same team has reaped handsome rewards with a Science Masters series, acquired by publishers in 26 countries.

The new series, under the heading Master Classes, is planned as a 60-volume library to appear at the rate of 12 titles annually from fall 1996 through the year 2000. Each will consist of a 40,000-word essay—unillustrated—by an outstanding thinker, writer, artist or researcher with a record of having written successfully for the general public.

Main subject areas are society; philosophy, politics and psychology; language and literature; art and civilization; natural history; science; and history. A prospectus states, "The authors must bring to their themes not just the learning of the scholar but also the personal insights and perspectives which bring a text to life in a way that no encyclopedia entry can match."

Although none of the authors has yet been announced, publishers around the world have responded to Master Classes with rare enthusiasm. Basic Books holds the rights here. Advances so far are into eight figures.

As for Science Masters, Orion and Basic Books, its primary publishers, have asked Brockman to commission 10 more titles to augment the initial 12. The request comes three months before the first three are released. In both the U.S. and Britain this trio will be offered by major book clubs.

A NEW CONCEPT IN SCIENCE PUBLISHING

An all-new series of books from:

- John D. Barrow
- Mary Catherine Bateson
- Colin Blakemore
- Paul Davies
- Richard Dawkins
- Daniel C. Dennett
- Jared Diamond
- Stephen Jay Gould
- Daniel Hillis
- Richard Leakey
- Marvin Minsky
- George Smoot

The Science Masters

Sampler

EVEN HARDER THAN DOING

GREAT SCIENCE IS EXPLAINING IT.

THAT'S WHAT THESE BOOKS DO.

In search of our foremothers

The Origin Of Humankind
by Richard Leakey, Weidenfeld &
Nicholson/Basic Books, pp 171, £9·99/$20

Bernard Wood

OUR understanding of the jigsaw of human prehistory is growing apace. Much of this growth is due to the recovery of fossil evidence—akin to discovering additional pieces of the jigsaw. We are also, however, becoming more adept at sorting out the pieces once they are found. Modern morphometric methods help to match adjacent pieces. Cladistic analysis has provided a set of rules for deciding how regions of the jigsaw are related to each other. These methods are not foolproof, but they are helping to reduce our ignorance.

Advances in molecular biology are also giving us clues about the later stages of our evolution, as well as a picture of what we should expect to see at the beginning of human evolutionary history. The close similarities between the genetic codes of modern humans and the chimpanzees and gorillas have served to confirm and reinforce the strength of the links between human prehistory and the evolutionary history of the African apes.

Likewise, any proposed scheme for the closing stages of the evolution of Homo sapiens has to accommodate the relatively small amounts of genetic variation that have accumulated within the mitochondrial genome of modern human populations. The small scale of these differences points to a relatively recent differentiation of modern humans.

Human origins continue to spark widespread interest, but as the methods used by palaeobiologists become more sophisticated, it is important that public understanding keeps pace with advances in our knowledge. Richard Leakey's contribution to the Science Masters series achieves a high standard of popular science writing. Instead of attempting a comprehensive review of all the nooks and crannies of

human prehistory, he opts for chronicling the most direct "route" between the earliest hominids and modern humans, H. sapiens. The advantage of this strategy is that the evidence and concepts are shorn of many of their ambiguities; the disadvantage is that it could present a story which is unrealistically simple. It is to Leakey's credit that he manages to avoid this pitfall, and his account catches the sense of what has been achieved, while drawing the reader's attention to those areas where our understanding is uncertain.

Among the several achievements of this book is the successful integration of discussions about structure and behaviour. The section on the evolution of the human brain succeeds particularly well. It sets out the rival hypotheses explaining which selection pressures operated to sustain the increase in brain size which is so evident in the later stages of evolution within the genus Homo. This is, however, a part of the jigsaw that is almost certainly more complex, and thus more interesting, than the picture Leakey paints for his readers. The large size of the brain is such a potent icon of humanity that we are reluctant to consider that brain enlargement may have occurred in more than one lineage of early hominids. If this is the case, which seems likely, then it has implications for the emergence of language and other associated skills.

In the main, the book sensibly concentrates on that part of the evolution of Homo that is, at least taxonomically, less contentious than the earlier stages. But because the text tells us relatively little about the bodies and habits of the precursors of Homo erectus, the extent of the evolutionary change, which is so

dramatically documented by the skeleton of a young male H. erectus recovered from the west side of Lake Turkana in Kenya, will probably not be fully appreciated by the reader. For all the apparent modernity of the postcranial skeleton of early African H. erectus, its relative brain size shows little advance over that of earlier forms of Homo. Once the morphology of H. erectus became established a little less than 2 million years ago, brain size apparently remained relatively static for more than a million years.

It is extremely doubtful that the increase in absolute brain size which occurs in archaic H. sapiens is related to a simple increase in overall body size. We have to look for either a trigger for this increase in brain size, or the release of a constraint that was operating in the early Homo species to limit brain size. Changes in systems as apparently diverse as socialisation and diet have been canvassed as the cause of the increase in brain size. The explanation, or explanations, for the evolution of the human brain has been, and continues to be, the most sought-after prize in human evolutionary studies.

This book is a reliable and accessible source of information about the achievements of, and the challenges facing, those who study the biology of our ancestors. It is challenging without being intimidating. Likewise, it manages to convey the excitement of the search for human origins without trivialising it. If this standard is maintained, the Science Masters series looks set to play a major role in the responsible popularisation of science. □

Bernard Wood is in the Hominid Palaeontology Research Group, Department of Human Anatomy and Cell Biology, University of Liverpool

A lifetime in science: Richard Leakey, palaeontologist and conservationist

Science Masters

The Last Three Minutes

CONJECTURES ABOUT THE ULTIMATE FATE OF THE UNIVERSE

PAUL DAVIES

A wonderful, fun book—morbid to the core!—that combines the latest and most scientifically sound thinking about the ultimate fate of the universe with vivid scenarios of how it will feel to those of us still around when the end comes.

Look, if you will, past that last day of sunlight into perpetual night. Experience the onset of stardoom—when the nuclear energy of burning stars is finally exhausted.

And then, perhaps, the big crunch—the last three minutes, when the temperature of the cosmos becomes so great that even atomic nuclei must disintegrate, when larger and larger regions of space are compressed into smaller and smaller volumes. Will this be the stage on which cosmic life plays out its final act? Or is the universe destined to end very differently and in the not too distant future? Indeed, will the universe end at all? If it endures forever, will humanity or our descendants, robots or flesh, find a way to survive through eternal night?

No one writing today is better able to tell this story than Paul Davies, whom the *Washington Times* described as "the best science writer on either side of the Atlantic."

The Origin of the Universe

JOHN D. BARROW

In the Beginning for beginners; the latest information from a first-rate scientist and science writer.

There is no more fascinating question in all of science than that of how space, matter, and even time began. Now John D. Barrow, who has been at the cutting edge of this research, explains the complex physical processes that govern the origin of the universe.

Barrow discusses how to understand whether time had a beginning; why scientists feel there may be extra dimensions to space; and what the remarkable consequences may be of cosmic wormholes—links between otherwise disconnected parts of space and time. He also shows why the discoveries made by NASA's COBE satellite are of such paramount importance.
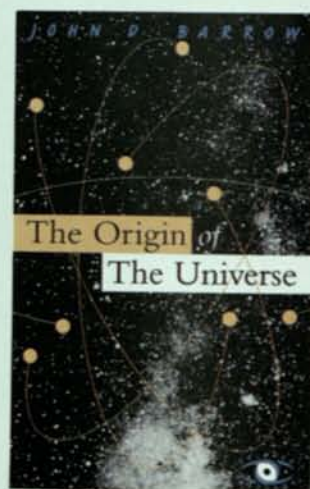
The Origin of Humankind

RICHARD LEAKEY

The world's foremost fossil hunter tells the story of the first humans.
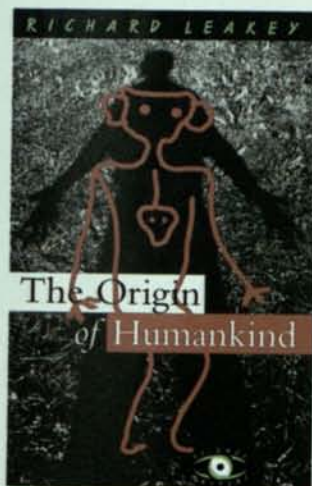
"The name Leakey is synonymous with the study of human origins," wrote the *New York Times*. This renowned family of paleontologists—Louis Leakey, Mary Leakey, and their son, Richard Leakey—has vastly expanded our understanding of human evolution.

The Origin of Humankind is Richard Leakey's final statement on human evolution. Deriving its power from the author's unquestioned authority in the field of paleontology, and enriched by his new interest in wildlife, this book answers the question: What made humans human? Leakey argues that when one of our hominid ancestors acquired the ability to walk upright (called "bipedalism"), the evolution of modern humans became possible, perhaps even inevitable.
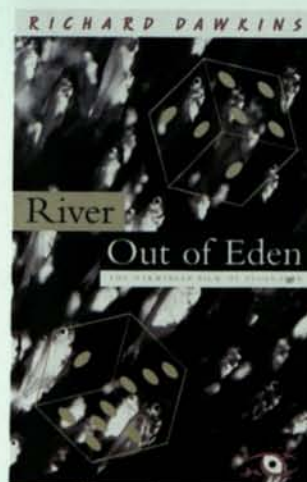
▶ COMING IN MARCH

River Out of Eden

THE DARWINIAN VIEW OF EVOLUTION

RICHARD DAWKINS

The bestselling evolutionary biologist joins the ranks of the Science Masters.

Ever since he coined the term "selfish gene" in his book of the same name to describe the true goal of evolution, Richard Dawkins has become one of the most highly regarded and widely cited evolutionary biologists.

In Dawkins's view, the basic unit of evolution is not the individual but the gene. Human beings are vehicles of evolution—gene carriers whose primary purpose is propagation of their own genes. In this new book, Dawkins explains evolution as a flowing river of genes, demonstrating how genes meet, compete, unite, and sometimes separate to form new species.

BOOKS

Masters of the universe

S tephen Hawking's A Brief History Of Time started a tidal wave in popular science publishing. Even readers who could not fully understand much of Hawking's book were excited and enchanted by this new view of our universe, a view that progressed from the Big Bang to black holes. Mischievously, he even suggested that, when we had a complete theory of physics, we would "know the mind of God". Part of the attraction of Hawking's book is that he himself had made fundamental contributions to the subject: we could learn something of how an exceptional mind tackles great problems.

Not surprisingly, other publishers wished to ride the surf, so there has been a flurry of books on physics and cosmology, with varying degrees of success. Now Orion is publishing the first three titles in its Science Masters series, a new and ambitious venture involving 26 publishers worldwide and designed to bring science to the public in an easily accessible form.

One might think that Hawking had already stolen all the excitement and that there is not all that much new to tell. However, this is not the case; great science, like great art, thrives on many viewings. Just as we can see Hamlet again and again, each time appreciating new subtleties and thrilling to the language, so we remain enthralled by, and understand more and more with repeated accounts of, the origins of the universe and humankind. In this respect the series makes a very successful start.

John Barrow's **The Origin Of The Universe** (£9.99) takes us elegantly through the arguments that have led to the astonishing idea that the universe we know — and there may be universes we will never know about — started as a ball no

Where did it begin? When will it end? LEWIS WOLPERT dissects a new batch of scientific writing for the lay reader

bigger than 3mm in diameter. If the evidence were not so substantial, one would have to treat it as an over-the-top Monty Python joke. Particularly when Barrow says: "This sounds amazingly small but the problem is that it is actually so large." We non-physicists just have to take their arguments on trust and accept that observations, such as the detection of the cosmic radiation field, are crucial.

Ideas about the origin of our universe involve the coming together of cosmology, where distances are measured in light years, and particle physics, where the distances are infinitesimally small. It is a wonderful triumph of science. A problem for popularisers is that physics is both difficult and very mathematical. Worse still, many of the phenomena, such as curved space-time, are conceptually completely alien to our day-to-day experiences of the world. Even the best science writing only allows us a glimpse at what is really going on in all those equations. Even so, Barrow's book gives us an excellent account of the universe's origin, one that is accessible and not unreasonably testing at times. He also has the courage to include a few equations.

Paul Davies's **The Last Three Minutes** (£9.99) also deals with cosmology and particle physics, but

with the emphasis on where it will all end. That could be quite soon, if a comet collides with the earth, or in some billions of years when entropy is triumphant and the universe would be a "dilute soup of protons, neutrons and a dwindling number of electrons and positrons, all slowly moving further and further apart. No significant event would occur to interrupt the bleak sterility of the universe that has run its course yet still faces eternal life — perhaps eternal death would be a better description".

Davies picks up on Bertrand Russell's fit of depression at contemplating the death of the universe, with "the noonday brightness of human genius" destined for extinction, and takes a more positive view. While human beings would not survive in the dilute soup of electrons and positrons, we should think rather of our distant descendants, who are unlikely to be human beings. He foresees a colonisation of space and the evolution of organisms which are a symbiotic blend of organic and artificial networks. Davies believes that, given long enough, anything that can happen will happen. The technology of our descendants will be bounded only by the laws of physics.

In spite of all their attempts at explaining the universe in scientific terms, one is still left with an extreme discomfort at the idea that time had a beginning. Talk of singularities makes one no calmer. But as the physicist Richard Feynmann has said, it is interesting to live with such uncertainties and certainly better than to put forward answers that are almost certainly wrong. We should not feel frightened living in a purpose-free universe.

9 OCTOBER 1994

Richard Leakey's **Origin Of Humankind** (£9.99) is easier for the lay reader because evolutionary biology is much more accessible than physics. His is an outstanding account of our current understanding of human evolution. There are four key stages in the evolution of humans since we split off from an ape-like ancestor. In the first, some 7m years ago, bipedalism evolved and our ancestors became upright. This both freed the hands and improved locomotion. The second stage took some 5m years and resulted in the evolution of a variety of human-like species. During this time, the third stage took place — the significant increase in brain size coupled with tool-using that led to the fourth and final stage with the evolution of language, artistic creativity and consciousness.

Reconstructing these stages from the fossil and archeological evidence is beset with problems. Not least of these is that we have no idea of what fossils have not been preserved. But by applying a variety of new techniques, a rather satisfactory account has emerged, which is based on careful scientific principles. Of course radioactive dating has been crucial, but there is also, for example, a very detailed study of tool-making, which had its origin 2.5m years ago, and which required a considerable amount of skill. There is even evidence that most tool-makers were right-handed. This is significant as it implies brain lateralisation not present in apes.

Leakey's approach has a strong biological foundation and he puts great emphasis on the spurt in growth we all experience in adolescence. Humans are born helpless and have prolonged childhoods, and it may be that they need to remain small during the period when they absorb cultural rules to ensure that they listen and obey. Moreover, the size at birth is determined by how large a skull can pass through the pelvic opening, whose structure is constrained by bipedalism.

Just how important are meat eating and the role of tools in killing prey is a matter of controversy. The image of our distant ancestors as accomplished hunters may be a myth. Far more important was probably the adoption of food sharing which favoured the development of language and social reciprocity. Many other problems remain unresolved — did Homo sapiens have its origins in Africa, what happened to the Neanderthals and what was the function of early cave paintings? But the greatest problem concerns the origin of language.

Did language develop slowly over a billion years, or very rapidly just some 100,000 years ago? Arguments in favour of a very recent origin are based on the abrupt change in behaviour seen in the upper paleolithic revolution: this saw artistic expression, a great improvement in tool making, and evidence of trading, all of which require language. However, Leakey does not accept such a recent evolution of language. The size of the brain of Homo erectus half a million years ago was similar to that of modern humans, so the neural basis for language was probably present, as was brain asymmetry. The issue as to whether the vocal apparatus had evolved to give speech remains undecided. A further mystery is just how much cognitive skill was required for tool-making and whether such cognition requires language.

These three books admirably achieve what the series sets out to do — to explain exciting science clearly and, thankfully, briefly.

Lewis Wolpert is the author of The Unnatural Nature Of Science

■Barrow, John D. The Origin of the Universe. Oct. 1994. 176p. index. illus. Basic, $20 (0-465-05354-8). Galley. **XX**

523.1 Cosmology // Astrophysics [OCLC] 94-6343

Davies, Paul. The Last Three Minutes: Conjectures about the Ultimate Fate of the Universe. Oct. 1994. 176p. illus. Basic, $20 (0-465-04892-7). Galley. **XX**

523.19 Universe, Destruction of [BKL]

Leakey, Richard. The Origin of Humankind. Oct. 1994. 176p. Basic, $20 (0-465-03135-8). Galley. **XX**

573.2 Human evolution // Man, Prehistoric [OCLC] 94-3617.

Basic Books inaugurates its Science Masters series with answers to the three questions most people ask about the cosmos: When did it start? When will it end? and How did I get mixed up in it?

Despite the incredible advances of astrophysics this century, it has yet to reveal what initiated the big bang, but it has a comprehensible picture of events from "10 to the minus 35th power" seconds onward. Barrow paints the picture of how the time line was extended that far back via the discoveries of the expanding universe and relic infrared radiation, discoveries proving a single originating event did occur. Each step back was marked by discussion and doubt, and it is the firm principle of this series to delineate clearly how controversies were resolved and the relative persuasiveness of current theories regarding the formation of galaxies and particles. One that seems widely accepted, but still fails a few scientists, is the "inflation theory" of Alan Guth, which holds that the comparatively uniform appearance of the universe—which is otherwise inexplicable due to hordes of "magnetic monopoles" scooting about moments after creation—is due to a phenomenal expansion that took care of the problem. Don't ask your reviewer to explain it—that's Barrow's job, one he does with consummate clarity.

At the Armageddon end of the existential spectrum, Davies spins out possible doomsday scenarios. That the cosmos is on a one-way trip to extinction has been known since the 1850s, when the implications of entropy became

clear, and just to scare up some concentrated, interest, Davies reminds us that even if a cataclysmic cometary collision doesn't destroy us, a bloated sun four billion years hence will roast us, and well before the universe decides if it will expand for eternity or collapse into a big crunch. The choice depends on the amount of dark, nonluminous matter that exists. If there are not enough neutrinos and WIMPs (weakly interacting massive particles) to rein in the expansion, there's plenty of time for weird occurrences, such as blacks holes blowing up or protons decaying. At least these options of annihilation give intelligent life time to try to stave off the inevitable, but a technical means to salvation may be moot, as Davies floats a third idea that says the universe could be randomly destroyed *without warning*, due to "vacuum decay"! If that doesn't force readers to get religion, it may inspire the tinkerers among them to escape by constructing a wormhole to a baby universe. An impish, delightfully grim primer.

The famed name of Leakey adds gravitas to Basic's series. He, of course, has for decades been scratching the badlands of Africa's Great Rift Valley for any sign of human origins, and the amazing thing is the quantity and quality of information paleoanthropologists can glean from the meager finds. Scarely a thousand fossils of bipedal premodern humans have been unearthed, according to Leakey, and still a sensible, though not unchallenged, history can be reconstructed. Essentially, Leakey summarizes the evolution of theories, from Darwin's to his own, in the process demonstrating the scientific method in action (as do Barrow and Davies). Covering the taxonomy of skeletons and craniums, shapes of tools, and the first sprouts of art and culture, Leakey knowledgeably points the enthralled neophyte to the wide avenues of future discoveries.

Aimed at busy, nonmathematical readers, this precise series evinces solid quality control, and begins under highly favorable auspices with these three books. Nine follow-up titles are in the pipeline, all by experts with popular works already under their belts (e.g., Stephen Jay Gould of *Bully for Brontosaurus* acclaim): what better credentials can public libraries hope for? —*Gilbert Taylor*

Leakey, Richard
THE ORIGIN OF
HUMANKIND
Basic (176 pp.)
$20.00
October 26, 1994
ISBN: 0-465-03135-8

There's an elegant, albeit humbling, logic to the first three books in the Science Masters Series, all coming in October. In the middle is Leakey (*Origins Reconsidered*, 1992, etc.) writing about, well, us. Then, lest we acquire an inflated notion of our own importance, there are the ultimate bookends of the beginning and the end of the universe: *The Origin of the Universe*, by John D. Barrow (Astronomy/Univ. of Sussex, England, *PI in the Sky*, 1992, etc.) and *The Last Three Minutes* by Paul Davies (Natural Philosophy/ Univ. of Adelaide, Australia; *The Mind of God*, 1991, etc.). The series is being published by an international consortium of 26 publishers. It's a serious, much-needed effort to bring practicing scientists in touch with the general public. Other heavyweight brainiacs lined up for the series include philosopher and cog-sci guy Daniel C. Dennett; paleontologist (and DiMaggiologist) Stephen Jay Gould; anthropologist Mary Catherine Bateson; and artificial intelligence researcher Marvin Minsky. *This* is good publishing. PBS, eat your heart out.

. . .

people are **talking** about

Unfashionable Hillary Jackie Kennedy had Oleg Cassini; Nancy Reagan had Adolfo; Barbara Bush had Arnold Scaasi. But today's first lady has mostly shunned the fashion world. Why? "Let's face it. If Hillary lived and breathed fashion, she'd be taken less seriously," says CFDA executive director Fern Mallis. Still, ending up on every worst-dressed list can't be much fun. Maybe that's why Clinton has recently been spotted wearing Donna Karan and hosting a reception with Ralph Lauren.

Sept. '92 On the campaign trail, Hillary stuns by wearing any old thing: blouse by Eicoli, skirt by Carla's of New Mexico.

Jan. '93 Hillary goes to Washington, but eschews well-known designers for an Arkansan; her inaugural headgear is panned as looking like a UFO.

April '93 Designers begin to realize that Hillary wants to dress like a frumpy working woman. "We said, Let it go," says Mallis. "It's more important that she be known for her brain."

June '93 Still, outfits like this one, worn to the Newport Jazz Festival—top by George Gross, pants by Black Tie—confirm Cassini's comment, "Hillary makes a big effort to avoid being considered well dressed."

June '94 Another working-woman outfit, by Hanae Mori, proves that Hillary is thrifty—she was photographed in the same suit in 1993.

Sept. '94 This suit, by Dana Buchman, forces the design world to admit that Hillary is starting to learn. "By the time she and Bill leave office," says Mallis, "she'll probably be really well dressed."

Sexy science? Computer nerds are out; scientists are in. Ever since Stephen Hawking's *A Brief History of Time* became a surprise best-seller, a stack of sexily packaged science books, by hunky authors like Richard Leakey (*The Origin of Humankind*) and Richard Dawkins (*River Out of Eden*), have not only been fetching six-figure advances, they're actually making science hip. The 24-tome series, called Science Masters (Basic Books), will also include *The Last Three Minutes*, by Paul Davies (about the end of the universe), *The Origin of the Universe*, by John Barrow, and *The Mathematical Nature of Nature*, by biologist Ian Stewart. Best of all, you don't have to be a brain surgeon to understand them.

Not to mention . . . Band to watch: The Niagaras, a New York underground performance-art/rock combo led by Robert Whaley (brother of actor Frank), is a favorite of celebrities like Ethan Hawke, Julia Roberts, and Danny DeVito while simultaneously sending them up. (Whenever Hawke shows up at a show, they sing the taunting song "I'm not Ethan Hawke.") . . . Novel idea: Tim Willocks's *Green River Rising* (Morrow) has some critics complaining that the heroine is so tough that she could only have been written by a man. But Willocks got one thing right—how the sexes view body image. The character sees herself as overweight, while the hero thinks she's just perfect . . . . Has the mouse replaced the bunny? On some Japan Airlines domestic flights, attendants have been asked to wear mouse ears to match the Mickey Mouse and Donald Duck characters painted on the exteriors of the jets (they get matching aprons, too) . . . . The growing Church of Kurt: Tributes to Cobain so far include "All Apologies," by Sinéad O'Connor; "Let Me In," by R.E.M.'s Michael Stipe; and all of Neil Young's album *Sleeps with Angels* . . . . What becomes a legend most? Check out Anthony Hopkins in *Legends of the Fall* in February . . . . Winter words to live by from the *Aspen Daily News*: "If you don't want it printed, don't let it happen."
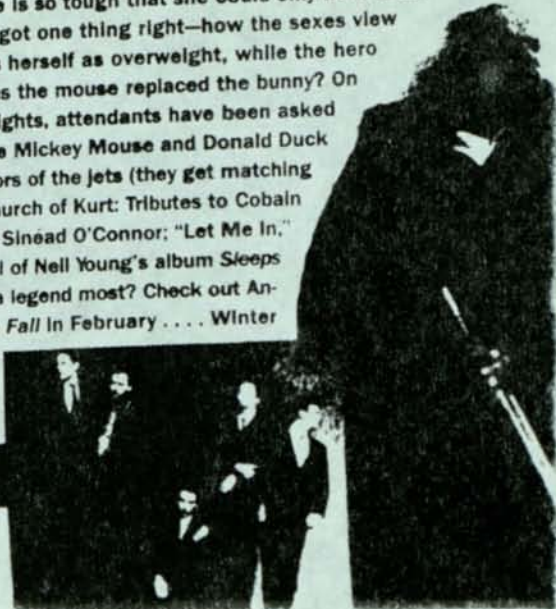
Back to their roots
Are blonds over? Uma Thurman saved her career by putting on a dark wig for *Pulp Fiction*. Ellen Barkin ditched husband Gabriel Byrne, went brunette, and got a new, younger boyfriend and a ton of publicity. Then, too, are other famous blonds reportedly unhappy. Bye-Bye Nice 'N' Easy?

Stars fall for the Niagaras, NEAR RIGHT; furry Hopkins, RIGHT.

RIGHTS

BY PAUL NATHAN

Science for the People Some ideas don't need a fax to cross oceans and continents.

Earlier this year New York agent John Brockman, who specializes in science, breakfasted in London with Anthony Cheetham, head of the new house Orion. Cheetham asked him to assemble a package of 12 short books by leading scientists that would be accessible to the educated, intelligent reader. Two weeks later Brockman met in Tokyo with Maseo Kase of Soshi Sha, who put in a request for a science library of 40,000-word extended essays—12 books, please.

Over the ABA period (May 23–26) the agent drew up a list of authors and began selling the series into the international marketplace. To date, deals have been concluded in 16 markets, starting with Orion as primary publisher. The others:

U.S., Basic Books, for $720,000; also *Harper's* magazine, first serial, $21,000; Germany, Bertelsmann, $480,000; Japan, Soshi Sha, $200,000; Italy, Rizzoli, $180,000; Spain, Plaza y Janes, $150,000; France, Dunod, $75,000; Korea, Dong-A Ilbo, $40,000; Netherlands, Contact, $30,000; Sweden, Natur och Kultur, ?50,000; Brazil, Rocco, $18,000; Denmark, Munksgaard, $9000; Russia, Progress (terms in negotiation); People's Republic of China, Shanghai Scientific & Technical Publishers, $3000; Taiwan, Commonwealth, $24,000; and Norway, Universitetsforlaget, $20,000.

Contributors and their subjects are John Barrow, *The Origin of the Universe*; Mary Catherine Bateson, *Social Change and Adaptation*; Colin Blakemore, *Mind and Brain*; Paul Davies, *The Nature of Time*; Richard Dawkins, *Design and Adaptation*; Daniel C. Dennett, *The Science of Cognition*; Jared Diamond, *Human Evolution and the Environment*; Stephen Jay Gould, *Evolution and the History of Life*; Daniel Hillis, *The Future of Computers*; Richard Leakey, *Human Origins*; Marvin Minsky, *Thinking Machines: Computers and AI*; and George Smoot, *The Unity of Knowledge and the Universe*.

The first half-dozen titles are tentatively scheduled for delivery to publishers in October 1993. Audiotapes are planned and TV adaptations hoped for.

Until a few years ago, most of the writers would have been published for a limited audience, mainly by university presses. Payment would have been around $2000 to $3000 a book. Now, thanks to what Brockman describes as his biggest undertaking to date, they will earn many times such amounts.

The total in publishers' guarantees so far stands at $2,020,000.

...represents a revolutionary attempt to bring together the latest explorations into life's most basic—and elusive—mysteries: How did the universe come to be? How did humans evolve? How will life as we know it come to an end? These three volumes, produced in beautiful editions and available in paperback only from QPB, transport you to the observatories, geological digs, and laboratories where the answers to these and other fascinating puzzles are now taking shape.

Each Science Masters volume has been written by a world-renowned expert. Who better to give you—in The Origin of Humankind—the very latest thinking on evolution than Richard Leakey, whose surname is synonymous with the study of human origins? In The Origin of the Universe, cutting-edge astronomer and esteemed science writer John D. Barrow will help you explore how time, space, and matter all began. And in The Last Three Minutes you'll investigate the morbidly intriguing prospect of the end of the world with Paul Davies, the author of such acclaimed books as The Mind of God and The Cosmic Blueprint. Each book offers not only an accessible overview of its subject, but also the opinions, interpretations, and speculations of a leading thinker in the field.

The Origin of Humankind

In The Origin of Humankind Leakey posits the controversial notion that the evolution of modern humans became possible—and perhaps inevitable—once apes began to walk upright. He takes issue with colleagues who suggest that Homo erectus, who lived 1.5 million years ago, was more ape than human. Leakey also describes the discovery of the earliest tools—simple stone flakes that were used for cutting—and tells what those tools reveal about their makers (for example, that they had begun to use meat as a source of protein). And he traces the distinctly human trait of prolonged childhood back 1.7 million years, linking it to the fact that human children are born "too early" (based on comparisons with other primates, human babies should probably stay in the womb for 21 months).

The Origin of the Universe

Since the turn of the century our image of our galaxy and the universe at large has changed dramatically, beginning with Einstein's discoveries and continuing through the ideas of Stephen Hawking and others. In The Origin of the Universe, John Barrow offers "a short account of the Beginning for beginners," covering the latest specula-

tive theories about the nature of time, the "inflationary universe," wormholes, and the significance of the COBE satellite observations of 1992. (Among other things, they provided a glimpse of physical processes that occurred when the universe was just $10^{(-35)}$ seconds old.) "The structure of the visible universe today," Barrow writes, "is just the expanded image of conditions in some tiny region of the initial state."
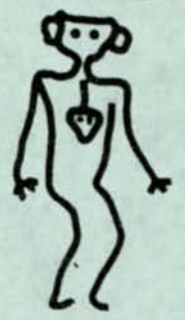
The Last Three Minutes

"The date: August 21, 2126. Doomsday." So begins The Last Three Minutes, Paul Davies' absorbing look at a seemingly inevitable event that we still prefer to view as science fiction. Until recently, scientists believed that, in 2126, the trillion-ton comet Swift-Tuttle might collide with Earth, putting an end to life as we know it. And though it now seems that Swift-Tuttle will pass us by, Davies writes that "orbital instability causes a continual traffic of these ... lethal bodies into and out of the inner solar system. ... It is only a matter of time before one strikes." Davies explores this and other scenarios that seem destined to accomplish the unthinkable—proton decay, which could make our entire planet gradually collapse, and the Hawking effect, which would eventually cause all black holes to disappear (and take the universe with them).

These definitive Science Masters volumes will give you more than a basic understanding of up-to-the-minute science; they offer a new perspective on the consequences and meaning of our lives today. 176 pages each.

Richard Leakey is the author of People of the Lake, The Making of Mankind, One Life, Origins and Origins Reconsidered (both with Roger Lewin), and Conservation: Save the Elephants. He lives in Nairobi, Kenya, where he is Chairman of the National Museums of Kenya.

John D. Barrow is Professor of Astronomy at the University of Sussex (England). He is the author of The Left Hand of Creation (with John Silk), Pi in the Sky, Theories of Everything, The Anthropic Cosmological Principle (with Frank Tipler), and The World Within the World.

Paul Davies is Professor of Natural Philosophy at the University of Adelaide (Australia). His books include The Mind of God, The Cosmic Blueprint, and Superforce.

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John D. Barrow
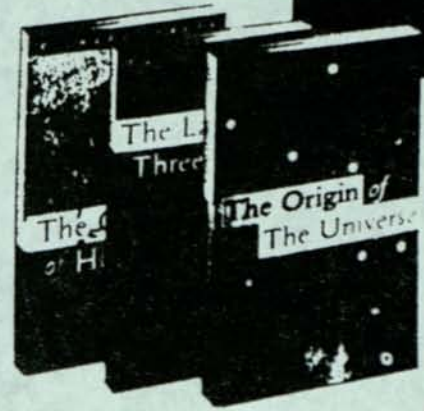The Origin of the Universe

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Science

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The Origin of the Universe
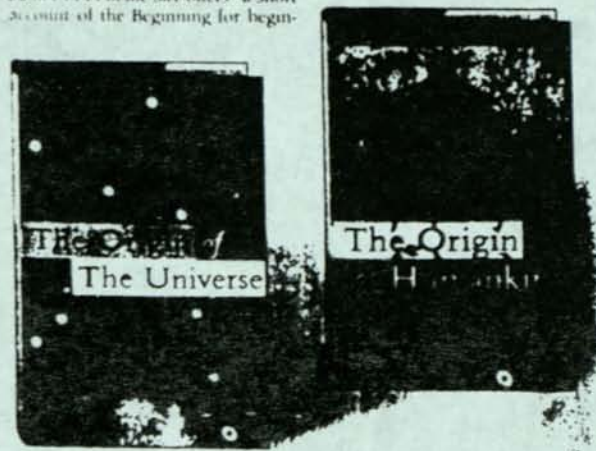*by John D. Barrow*

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The Last Three Minutes
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ners." John D. Barrow covers the latest speculative theories about the nature of time, the "inflationary universe," wormholes and the significance of the COBE satellite observations of 1992, which gave us a glimpse of the physical processes that occurred when the universe was just $10(-35)$ seconds old.

What's new in evolutionary theory? Who better to tell us than Richard Leakey, coauthor of *Origins* and *Origins Reconsidered* and the world's foremost fossil hunter? In *The Origin of Humankind*, Leakey provides an up-to-the-minute overview of evolutionary theory and research. He posits the controversial notion that the evolution of modern humans became possible once apes began to walk upright, describes the discovery of the earliest tools and traces the distinctly human trait of prolonged childhood back 1.7 million years!

Finally, we have the most thorough and scientifically rigorous of all Doomsday books, *The Last Three Minutes*. Paul Davies, author of such acclaimed books as *The Mind of God* and *The Cosmic Blueprint*, offers a dramatic look at the end of the world—a seemingly inevitable event we still prefer to view as science fiction. From trillion-ton comets to proton decay, he explores the various ways in which the universe might end, leading you inside a black hole and dramatizing the last day of sunlight, just before gravity crushes all remaining matter.

Taken together, *The Origin of Humankind*, *The Origin of the Universe* and *The Last Three Minutes* offer science buffs and lay readers a serious program of reading in the sciences, especially given its economical price, as part of your permanent library.

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TEN NEW BOOKS ANNOUNCED

The first three titles of *SCIENCE MASTERS™*, a series of twelve books by eminent scientists, are set for fall publication, it was announced today by John Brockman, Chairman and CEO of Brockman, Inc., agent and proprietor of the series, which originated in collaboration with Anthony Cheetham, Chairman of Orion Publishing Group in London and was developed in cooperation with Basic Books (a division of HarperCollins) in the United States. The *SCIENCE MASTERS™* series, featuring 40,000-word, accessible books aimed at the educated, but non-expert reader, will eventually appear in 26 languages.

SCIENCE MASTERS™ will be launched in England on October 10th by the Minister of Science at the Cheltenham Festival. The first three books—*The Origin of the Universe* by John Barrow, *The Last Three Minutes: Conjectures About the Ultimate Fate of the Universe* by Paul Davies, and *The Origin Of Humankind by* Richard Leakey—are a triple main selection of TSP (the quality trade paperback club) which is taking 22,000 copies of each and has made a firm commitment to the series as a whole. Book Club Associates are taking 3,500 of each in hardcover as alternate selections of the Book of the Month Club.

Given the initial pre-publication success, Brockman has been asked by Orion and Basic to commission ten additional *SCIENCE MASTERS™*. The new authors and their subjects are:

- Peter Atkins, *Molecular Chemistry;* Lecturer in physical chemistry at the University of Oxford, author of numerous works including *Quanta, The Creation, The Second Law*, *Molecules*, and *Creation Revisited*

- William H. Calvin, *The Emergence Of Intelligence;* Theoretical neurophysiologist on the faculty of the University of Washington School of Medicine; author of *The Throwing Madonna*, and The *River That Flows Uphill*

- Murray Gell-Mann, *Particle Physics*; Winner of the 1969 Nobel Prize in Physics for discovery of the quark and co-founder, Sante Fe Institute; author of *The Quark And The Jaguar: Adventures In The Simple And The Complex*

- Lynn Margulis, *Cellular Evolution*; Microbiologist, Distinguished Professor (Department of Botany), University of Massachusetts at Amherst; author of *Symbiosis in Cell Evolution*, and *Origins of Sex*

- Steven Pinker, *Language & Mind*; Experimental psychologist; Director of the Center for Cognitive Neuroscience, MIT; author of *The Language Instinct: How The Mind Creates Language*

- Stephen H. Schneider, *Atmosphere & Environment*; Atmospheric researcher; Professor in the Biological Sciences Department at Stanford University; author of *The Coevolution Of Climate And Life* and Global *Warming: Are We Entering The Greenhouse Century?*

- Ian Stewart, *The Mathematical Nature Of Nature;* Mathematician, University of Warwick; author of *Does God Play Dice?*; and The *Problems of Mathematics*

- Robert A. Weinberg, *The Molecular Origins Of Cancer*; Molecular biologist; member of the Whitehead Institute for Biomedical Research; Professor of Biology at MIT; author of *Racing to the Beginning of the Road: The Search for the Origin of Cancer* (forthcoming)

- George C. Williams, *Adaptation;* Evolutionary biologist; professor emeritus of Ecology and Evolution at the State University of New York at Stony Brook; author of *Adaptation and Natural Selection, Sex and Evolution;* and *Natural Selection: Domains, Levels, and Challenges*

- The tenth author, a world-class scientist and best-selling author, will be announced shortly.

**NEWS
from
Brockman, Inc.**

The international group of *SCIENCE MASTERS™* publishers include The Orion Publishing Group (United Kingdom); Basic Books—a division of HarperCollins (United States); Bertelsmann Verlag (Germany); R.C.S. Rizzoli Libri SpA (Italy); Dunod Editeur (France); Contact (Netherlands); Plaza Y Janes (Spain); Universitetsforlaget (Norway); Natur och Kultur (Sweden); Munksgaard (Denmark);

Werner Soderstrom Osakeyhtio (Finland); Editura Rocco Ltda (Brazil); Shanghai Scientific & Technical Publishers (China); Commonwealth Publishing(Taiwan); Soshisha (Japan); Wydawnictwo Cis (Poland); Kulturtrade (Hungary); Archa (Czech Republic); Archa (Slovakia); Editura Humanitas (Romania); Technica Publishing House (Bulgaria);and Verlag Fan Noli (Albania). According to Mr. Brockman, contracts in Korea, Greece, Israel, and Russia are being negotiated and will be announced shortly.