

VIS 217, Circulation

Princeton University

185 Nassau Room 303

Tue 1:30 – 4:20 pm, 7:30 – 9:40 pm

David Reinfurt / reinfurt@princeton.edu

www.c-i-r-c-u-l-a-t-i-o-n.org

Popular science writer James Gleick recently published a book titled simply, *The Information*. Perhaps you've seen it? Maybe even read it, all 526 pages worth? I haven't. But, I *was* instantly aware of it when it was published in March 2011 through book reviews like this one by Geoffrey Nunberg in *The New York Times*: <http://www.nytimes.com/2011/03/20/books/review/book-review-the-information-by-james-gleick.html>. (You might notice that the review published March 18 in print is concluded by a correction added April 3 on the website: "A review on March 20 about *The Information*, James Gleick's history of data organization, misstated the surname of the founder of cybernetics. He was Norbert Wiener, not Weiner.") I, however, read it on paper, complete with the error.

Meanwhile, I caught glancing references to *The Information* in other magazines, on the radio, through websites, in conversation. The book's subject matter, so far as I gleaned from these secondary sources, is information theory and includes the essentially-related subtopics of entropy, publication, computer networks, semantic chains, bits, encoding, and communication at large. Its constellation of references comprises Claude Shannon, Bell Labs, Norbert Wiener, cybernetics, MIT, Alan Turing's universal computer, Kurt Gödel, logical recursion, and so on and so on. All of this seemed way too close to my own interests; I was almost afraid to read it. (I've no idea if you can relate to this impulse, but I was worried that my thinking might be spoiled by reading someone else's synthesis of this material.) It was as if a more accomplished thinker and writer had opened the most active corners of my brain, mined the pertinent subjects, and ghosted it into a comprehensive and cohesive commercially available non-fiction hardback.

Several close friends showed no such reticence and began reading it immediately on publication. I soon heard accounts of how wonderful the book is. They might drop a nugget, a chapter title, or just offer a generalized effusive blessing. I resolved to read it myself once it came out in paperback. This bought me some time and anyway, I hate the unwieldiness of trade hardcover books with that many pages. Surely the paperback would be a bit more manageable — I could carry it on the subway, take it on a trip, curl up with it in bed.

One friend in particular was becoming increasingly emphatic, insisting I must read the book now. In June, he scanned Chapter 14, "After the Flood (A Great Album of Babel)," made a PDF and emailed it to me. He suggested I read only this chapter now (it is around Wikipedia and the endgame of libraries in the face of the ultimate archive known as the internet), as a preview or trailer for the rest of the book. So I read it. How could I not after such an effort? It *was* fantastic and my anticipation for the whole book was further stoked by this recommendation.

By August that year, my brother-in-law toted the brick-of-a-book up on vacation to Vermont because he thought I'd enjoy it. Well, yes, I probably would, but not yet. I was still trying to be disciplined in waiting to read it until I had finished a couple of other books. Over those two weeks, I occasionally and guiltily dipped into *The Information* as it laid around, all the while looking forward to when I would get to sit down quietly and read it as a whole. By the way, the hardcover looks like this: <http://around.com/wordpress/wp-content/uploads/US-book.png>. Finally, the paperback edition was released sometime early in the fall. I was distracted by other things on the release date, but when I realized my sloth, I hopped over to Amazon to order a copy. I was less than pleased by the redesigned softcover: http://ecx.images-amazon.com/images/I/31YXpsDi26L._BO2,204,203,200_PIsitb-sticker-arrow-click,TopRight,35,-76_AA300_SH20_OU01_.jpg

So I *still* didn't buy the book. I did however take my iPhone to the iBookstore (flipping the magic bookshelf at the center of the iBooks app) to track down a copy, or anyway see what was possible. The book was there and available for instant download at \$15.99. A sample section of the first 155 pages was also there to be had for free. Free trumps \$16 and besides, that would give me an excuse to hold onto my own thoughts on the book's subjects rather than finding and replacing with the more carefully and rigorously arranged ideas of the author. I downloaded the e-pub and flipped through it, still assuming I would read the entire corpus on paper. That e-snippet sits still largely unread on my soon-to-be-obsolete (didn't Apple release a new one yesterday?) iPhone stored in the electrical impulses (0 or 1) of its silicon memory as so much raw information — a total of 128,000 bits worth of the stuff.

But what's a bit? A bit is the standard unit of information as proposed by Bell Labs engineer Claude Shannon in his epoch-framing paper "A Mathematical Theory of Communication," published in 1948. Shannon describes an abstract model of a communication system that applies widely outside of the narrow confines of his specific research as a telephone engineer. Shannon's insights led directly to much of the information revolution and its attendant technologies.

As a base for his mathematical model, Shannon described a fundamental unit, like the inch or the second, which would allow for easy exchange and quantification of information: "the resulting units may be called binary digits, or more briefly, bits." (<http://cm.bell-labs.com/cm/ms/what/shannonday/shannon1948.pdf>) He recognized information as both the essential substance of any communication system and also its measure. The bit is information's atom, the smallest indivisible unit, or as anthropologist Gregory Bateson described some years later, it is "the difference that makes a difference." (http://en.wikipedia.org/wiki/Gregory_Bateson)

As soon as information could be quantified, measured and relayed in consistently measured chunks as bits, then it no longer mattered what kind of information was being relayed, what it meant, or to whom. Information was freed from meaning and now became a thing, as real as water and at least as fluid. Information was carried in the words on the pages of a book, by a secret whispered in confidence, through the electric currents of telegraph wires, and most consequently via electrical charges pulsing through the silicon valleys of a computer chip.

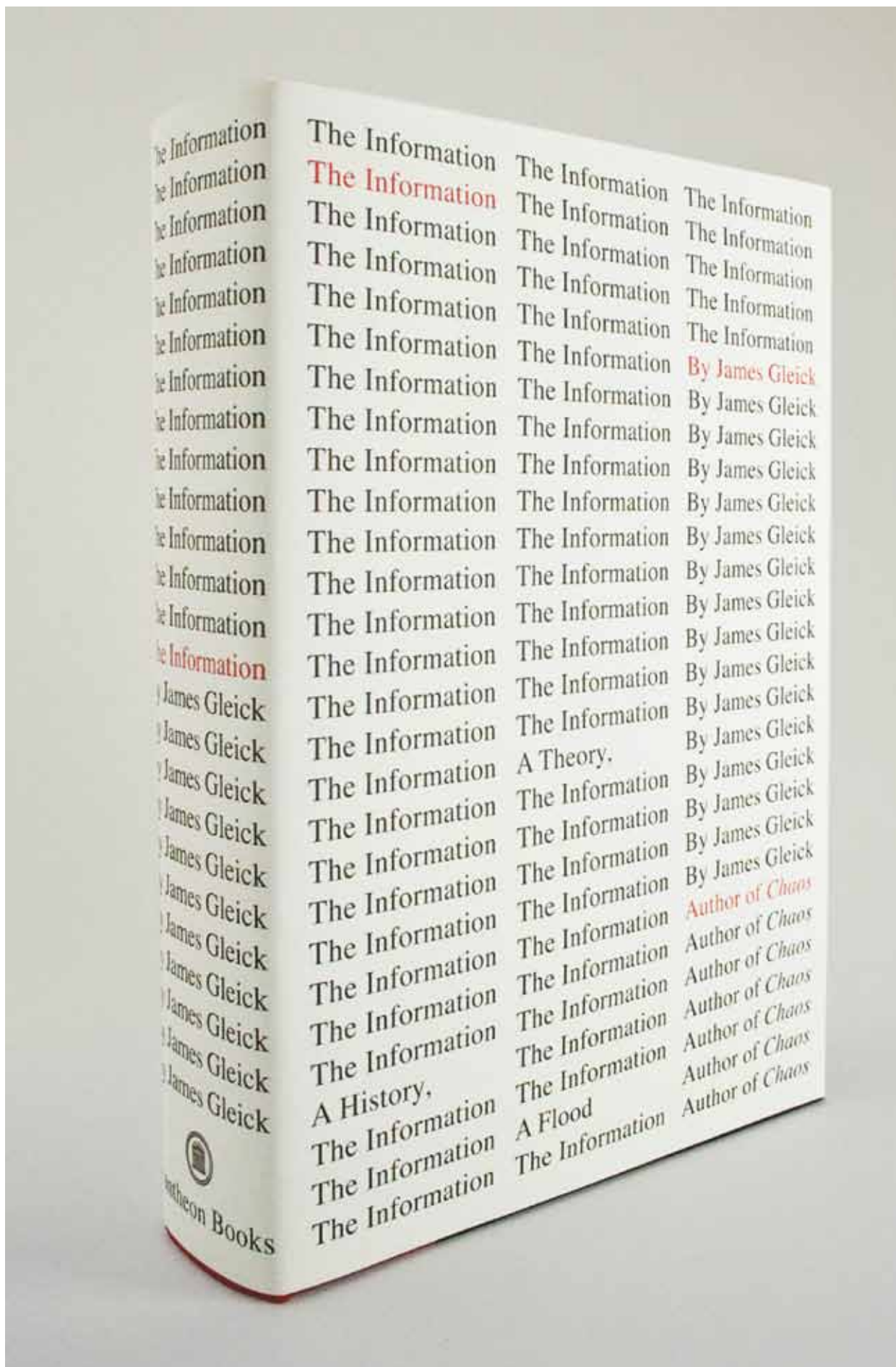
Meanwhile (and finally), I stumbled online onto a podcast hosted by The Free Library of Philadelphia. The podcast records an evening with *The Information's* author, James Gleick hosted at the Library on March 1, 2011, the night the book was officially published. "Andy," director of author relations for the Free Library, awkwardly introduces Gleick who then proceeds to read the book's prologue.

This podcast is a pretty curious document — posted online as a downloadable mp3, documenting a live event where the author reads from his book published that same day and then answers questions from the audience. Not to make too much of all this, but it seems to me that this mp3 begins to describe the piecemeal ecology that is publishing (in its myriad formats and protocols) right now. I'd like you, if you will, to stop reading now and to listen to this recording. Pay attention to both *what* Gleick is saying but also *how* what he is saying is finding you, now. It's about 30 minutes: <http://libwww.freelibrary.org/podcast/media/20110301-jamesgl.mp3>.

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Just now, I ordered the hardcover copy of *The Information*. It should arrive tomorrow and I can't wait to read it. But of course I already have been reading it, BIT BY BIT, through the multiple simultaneous channels that you've patiently just listened to me describe. It's almost as if *The Information's* information has pantomimed its subject matter by dividing and dispersing itself through the massively parallel networks of publishing and publicity, partially reassembling itself at the other end, in me — a reader, a victim, a willing accomplice.

Maybe I'll even get to read it.



The Information: A History, A Theory, A Flood, James Gleick (2011)

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Class Schedule

February 3	Introduction Lecture — “ <i>The Information</i> ” Exercise — Telephone games
February 10	Assignment 1 Review of class tools Student reading presentations start Reading — <i>The Information: A History, A Theory, A Flood</i> , James Gleick (Preface, Chapters 1–4)
February 17	Assignment 1 continues Student reading presentations continue Lecture — “Put That There” Reading — <i>The Information: A History, A Theory, A Flood</i> , James Gleick (Chapters 5–10)
February 24	Assignment 1 ends Student reading presentations end Lecture — “A Live Archive” Reading — <i>The Information: A History, A Theory, A Flood</i> , James Gleick (Chapters 11–15, Epilogue)
March 3	Assignment 2 Exercise — The walk to class Lecture — “A Million Random Digits . . . ” Reading — “A Mathematical Theory of Communication,” Claude Shannon
March 10	Assignment 2 continues Review, in-class critique (Assignment 2) Exercise — An Exquisite Corpse Lecture — “Ada Lovelace, and the first computer program” “Ada, Countess of Lovelace,” from <i>The Innovators</i> , Walter Isaacson
March 17	Spring break, no class
March 24	Assignment 2 continues Project review, in-class critique Lecture — “On Paul Rand, Not Rand Paul” Reading — “A Design Miscellany,” Paul Rand
March 31	Assignment 3 Guest artist James Goggin (http://www.practise.co.uk) / Mark Owens / Peter Mendelsund Lecture — “The Infinite Library” Reading — “The Cobweb,” Jill Lepore, “A World in Three Aisles,” Gideon Lewis-Kraus or Lecture — “Pure Data” Reading — “Pure Data,” Mark Owens

Peter Mendelsund?
@mendelsund, contact

April 7	<p>Assignment 3 continues</p> <p>Lecture — “Global Branding”</p> <p>Reading — “The Life and Death of Media,” Bruce Sterling</p>
April 14	<p>Assignment 3 continues</p> <p>Project review, in-class critique</p> <p>Demonstration — <i>The Medium is the Massage</i></p> <p>Reading — “Massaging the Message,” Ellen Lupton, Abbott Miller</p>
April 21	<p>Assignment 3 continues</p> <p>Individual meetings and class discussion</p> <p>Lecture — “Visible, Language, Workshop, on software design”</p> <p>Reading — “Computers and Design,” <i>Design Quarterly 142</i>, edited by Muriel Cooper, “Spatial Data Management,” Richard Bolt</p>
April 28	<p>Assignment 3 ends</p> <p>Final review of all work from the semester with visiting critics</p> <p>Reading — “The Ectasy of Plagiarism,” Jonathan Lethem</p>
May 4	<p>Final portfolio due by 1:30 pm</p>

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Course Description, Rationale and Assessment Plan

Exercise	Construct a Vase / Face using your own silhouette for the illusion
Assignment 1	Design an autonomous graphic form (i.e., one not relying on either symbolic or literal conventions) that means "STOP."
(Adjusted)	Design an autonomous graphic form to mean "GO."
Exercise	Render the masthead of The New York Times at several resolutions using 1/4 inch? graph paper grids
Assignment 2	Design an autonomous animated graphic form which means neither STOP nor GO but rather, WORKING (or IMWORKING ON IT, or IN PROCESS) Progress spinning wheel? (Thinking icon)
Assignment 3	Prepare a set of graphic forms which have an integral relationship one to another, and which can be combined or used separately to signal a complex whole. Project review, in-class critique Assignment 3: Using the family of graphic forms developed in Assignment 2, construct a system of meaning. In other words, build a network of syntactic relationships between the symbols you have created (modified and expanded) and use these to form a plastic, visual language with a limited vocabulary.

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Assignment 1

Design an autonomous graphic form* that means "STOP."

* i.e., one not relying on either symbolic or literal conventions. (good luck.)