The Information: A History, A Theory, A Flood

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The Information A Flood Read by Rob Shapiro
A History, The Information Read by Rob Shapiro
The Information The Information Read by Rob Shapiro
The Information The Information Read by Rob Shapiro
The Information Unabridged Read by Rob Shapiro

Synopsis

James Gleick, the author of the best sellers Chaos and GeÃƒâ Ã Â- nius, brings us his crowning work: a revelatory chronicle that shows how information has become the modern era’s defining quality-the blood, the fuel, the vital principle of our world. The story of information begins in a time profoundly unlike our own, when every thought and utterance vanished as soon as it was born. From the invention of scripts and alphabets to the long misunderstood "talkÃƒâ Ã Â- ing drums" of Africa, James Gleick tells the story of information technologies that changed the very nature of human consciousness. He provides portraits of the key figures contributing to the inexorable developÃƒâ Ã Â- ment of our modern understanding of information: Charles Babbage, the idiosyncratic inventor of the first great mechanical computer; Ada Byron, the poÃƒâ Ã Â- et’s brilliant and doomed daughter, who became the first true programmer; pivotal figures like Samuel Morse and Alan Turing; and Claude Shannon, the creÃƒâ Ã Â- ator of information theory itself. And then the information age comes upon us. CitiÃƒâ Ã Â- zens of this world become experts willy-nilly: aficionaÃƒâ Ã Â- dos of bits and bytes. And they sometimes feel they are drowning, swept by a deluge of signs and signals, news and images, blogs and tweets. The Information is the story of how we got here and where we are heading. It will transform readers’ view of its subject.

Book Information

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Customer Reviews

This book is dense with science but is a joy to read. It’s amazing how all of the electronics in our

lives are the product of a field that is still very young!

From African drumming to qubits and beyond, Gleick (almost) puts it all together. He addresses the mess Claude Shannon made for us regular people by divorcing information from meaning. Shannon's information is "surprise value". Anything repeated-redundant- is dispensable. 50% of English characters can be deleted, and the meaning of message still gets through. Hence algorithms, as a result of which music can be data-compressed without losing information. But, there is no meaning without some redundancy - letters and meanings do not change every instant.Shannon equates information with entropy - but common-sensically, entropy means the loss of information. Gleick tries to put meaning and information back together, but dealing with quantum computing, based on the idea that information cannot be lost, we find the claim that in theory, any book can be reassembled from its ashes -- as though the energy it would take to gather all the ashes and turn time backwards was merely an inconvenience.So, prepare to enjoy a hike through the history of science, but somehow I think Susskind, Hawkings et al have yet to make clear what they are talking about -- even to Gleick.From the book: "On the contrary, it seemed that most logical operations have no entropy cost at all. When a bit flips from zero to one, or vice-versa, the information is preserved. The process is reversible. Entropy is unchanged; no heat needs to be dissipated. Only an irreversible operation, he argued, increases entropy." (Kindle Locations 6479-6482).Please explain how information is preserved if the process is reversible. Does not reversible mean it can be wiped out? Oh, I know that increasing entropy means information loss -- but I wish Gleick took Ilya Prigogine into account - Prigogine makes the case that entropy is absolutely irreversible.I loved learning that Ada Byron, daughter of the beloved Lord, was the first computer programmer. She might have out-Einsteined Albert had she not died young of cancer. What a movie that would make!

Gleick's survey is obviously important and needed as it becomes increasingly obvious that information is the real currency of the global economy (viz. a recent article in the NY Times, "Mining of Raw Data May Bring New Productivity") . He does a good job of introducing basic concepts of information theory such as Shannon entropy. However the "information density", if you will, of the book is uneven: some chapters, such as those concerning Shannon, Turing and Kolmogorov, are very substantial and provide useful introduction to key concepts of contemporary information and computing; other chapters, such as those dealing with "memes" and information glut, come off as lightweight and vague.Why discuss memes instead of the theoretical but still tantalizing implications

of the holographic principle, the idea that the universe physically IS information, which follow from Gleick's all-too-cursory discussion of black hole thermodynamics? Why repeat the same tired discussion of the societal implications of information glut, instead of covering the increasing importance of Bayesian statistics - the science of constructing quantitative predictions based on prior information? E.T. Jaynes' "The Logic of Science," for example, demonstrates the extreme relevance of Shannon's information theory for analytic prediction yet does not get so much as a nod. These are areas in which Gleick's book, good as it is, still leaves the reader unsatisfied.

In the first chapters, Gleick talks longer about the historical origins of the logics. The ancient people learned their language in typical sitiÃƒÂ¬uations of the life.In the 1700-1800 it starts the Industrial Revolution with a particular form of tecnology, that step-by-step becomes always more important.The first computers, those had an exit very slowly, are early substituded by the modern computers.This fact follows by a research very strong, particullarly by the works of Shannon, von Neumann,Wiener.Gleick moves himself in this back-ground in an intelligent way: he talks with competence about the matematical theory and the phylosophical aspects.It is important for the actual research also the relation between logics and biology, what that is named "complexity theory".

Logic: A Course With Exercises, Part II) History: World History in 50 Events: From the Beginning of Time to the Present (World History, History Books, Earth History) (History in 50 Events Series Book 3) History: Human History in 50 Events: From Ancient Civilizations to Modern Times (World History, History Books, People History) (History in 50 Events Series Book 1) Myths from Mesopotamia: Creation, the Flood, Gilgamesh, and Others (Oxford World's Classics) 1935 Republican River Flood, The (Disaster) Adventures in Ocean Exploration : From the Discovery of the Titanic to the Search for Noah's Flood Flood and Monsoon Alert! (Revised) (Disaster Alert! (Paperback)) How to Survive a Flood (Prepare to Survive)