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# The Formula: How Algorithms Solve All Our Problems…and Create More

# Synopsis

A fascinating guided tour of the complex, fast-moving, and influential world of algorithms - what they are, why they're such powerful predictors of human behavior, and where they're headed next. Algorithms exert an extraordinary level of influence on our everyday lives - from dating websites and financial trading floors, through to online retailing and internet searches - Google's search algorithm is now a more closely guarded commercial secret than the recipe for Coca-Cola. Algorithms follow a series of instructions to solve a problem and will include a strategy to produce the best outcome possible from the options and permutations available. Used by scientists for many years and applied in a very specialized way, they are now increasingly employed to process the vast amounts of data being generated, in investment banks, in the movie industry where they are used to predict success or failure at the box office, and by social scientists and policy makers. What if everything in life could be reduced to a simple formula? What if numbers were able to tell us which partners we were best matched with - not just in terms of attractiveness, but for a long-term committed marriage? Or if they could say which films would be the biggest hits at the box office, and what changes could be made to those films to make them even more successful? Or even who is likely to commit certain crimes, and when? This may sound like the world of science fiction, but in fact it is just the tip of the iceberg in a world that is increasingly ruled by complex algorithms and neural networks. In The Formula, Luke Dormehl takes listeners inside the world of numbers, asking how we came to believe in the all-conquering power of algorithms; introducing the mathematicians, artificial intelligence experts and Silicon Valley entrepreneurs who are shaping this brave new world, and ultimately asking how we survive in an era where numbers can sometimes seem to create as many problems as they solve.

# Book Information

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## Customer Reviews

I wasn't quite sure how to rate this book. I enjoyed it for sure, but I'm not convinced I'm in favor of it. Though the author claims to point out both the pluses and minuses of using data-mining and algorithms to form conclusions, he seems to come down on the plus column. It was through sheer luck that the book I read immediately before this was called "Standard Deviation". In this one, the author describes how you can set computers to finding patterns in any mass set of data. The more the data, the more ridiculous patterns one can find. He gives dozens and dozens of examples. The one everyone is familiar with is the one where the stock market goes up when an original NFL team wins the Super Bowl. There was one fallacious one where experts erroneously concluded that living near a power grid caused illnesses and deaths. The point I'm trying to make is that these two books seem to be at odds with each other. And I find Standard Deviation to be the more convincing case. Some of "The Formula" sounds so over-the-top to me. The patterns they think they find when trying to match people for marriage, the guys who look for patterns in their biological readings, this smacks of exactly what "Standard Deviation" talks about. So, one wonders why I gave the book four stars. Well, just because I disagree with a book doesn't mean I have to give it a bad rating. It was quite interesting to read all these new developments in using algorithms, formulae, and algorithms to ATTEMPT to do these cool things. At least the author DOES point out the dangers to society in doing this.

I found the book superficial; it had little content about actual algorithms.

My best friend is a Luddite. "People are getting more machine like, I swear." On the other hand, I'm a technophile, so we have some spirited discussions. "Laugh it off," I say. "They're just trying to sell you something, what do you care? Just don't give them any money!" So I start reading this book. After the first chapter I'm jazzed: This is some helpful, encouraging stuff! Midway through the book I'm starting to get a bit creeped out. By the end I'm about ready to switch over to her side. Whatever you might think about loss of privacy, the intrusiveness of large organizations, ... it's already worse than you think it is. Full disclosure: I'm a programmer. I'm one of the people responsible for the "Formula." When the first A-bomb test took place in New Mexico, many of the scientists responsible had the feeling, "What have we unleashed on the Earth?" I'm not quite to that point yet concerning

computer algorithms and big data and the like, but The Formula points in some scary directions.

Traditionally, problem solving was done mainly heuristically, i.e. by exploring, investigating, by trial and error and similar means , until an answer was arrived at. This was fine for small problems but was not feasible or efficient for larger and more complex problems. With the dawn of technology and the development of large computers new approaches started to be employed.. The author of this book, Luke Dormehl, thinks algorithms permeate our business, if not our lives. There is a consensus that they are also both efficient and time-saving. But, what exactly are these great tools for problem solving? Algorithms are simply a step-by-step set of instructions for solving complex problems. While this may take a very long time manually, computers have made this process a fast and efficient option. Algorithms are employed in business, medicine, sports, security, and even romance. Here is a hypothetical example: Let us assume that Tom, a young man, is looking for a mate with appropriate qualities that suit his own. He would go to a company like eHarmony ( a real company ) which specialises in matching individuals for dates or marriage. The company would take down all Tom's personal qualities and requirements. Since eHarmony already has accumulated about 2000 names of young, eligible ladies, they promise Tom that they will try to match him with one these. Using computerised algorithms, eHarmony could easily eliminate all girls taller than 5.5 ft. (according to Tom's request), then delete all girls weighing more than 60 kg. Candidates could then be sorted according to whether they played tennis (Tom's favourite sport). Just one more specific instruction might reduce the viable options for Tom from 2000 to 10 women - a manageable number which could be handled manually through interviews, etc. Thus, instead of months or days, the whole selection process takes only seconds - at worst few minutes!The above is one simple approach. Another uses self quantification, i.e. representing every person by a number which summarises his or her qualities, This makes it much easier to match it with other person's numbers even if the size of the group is in millions. One company (GenePartner.com) even depends on matching the genes of the two prospective mates. In the case of Tom, above, a swab is taken from his saliva and sent to the lab for a genetic profile which is then checked against the female group for matching. The cost: $ 249.Can the algorithmic technique be applied to everything? The author asserts that Google, Facebook,  and many others depend on it daily for filtering their contents. The Los Angeles police department uses it to analyse crime locations and predict criminal activities on a continuous basis. However, some problems do not lend themselves to algorithmic treatment. Among these are emotional issues, creativity, student evaluations, all of which have a high degree of subjectivity.Of what benefit, then, is this book to the average reader other than general

knowledge. As one concludes from the above, most algorithmic applications are of large scale institutional nature. Small scale algorithmic systems to solve small, daily, individual problem are unheard of. We as individuals will just have to continue to solve our problems heuristically as we managed before.

fyi - every computer program is an algorithm - but this book is focused on algorithms (programs or applications or apps) that attempt to "read" people (by "mining" for data often easily available on the internet) or even emulate themwhile i found THE FORMULA fascinating for the description of various people-oriented algorithms (eg, computerized matchmaking, prediction, criminology) - the author sputtered while trying to find a moral basis - maybe cuz he tried for one overarching moral judgement when each instance of each app's use should be judged separatelyi suggest reading this for a glimpse at what is going on and what it suggests for the future of computers in our lives - for that - the book is well worth it

A good overview of the use of algorithms. Makes one think of the potential for good and unfortunately, the bad. I'm glad the author clearly stated that much of the algorithms use correlational data. In other words we can't always state that we have a cause and effect relationship with the results of the algorithm's output. In fact you can get some incredibly spurious results. AI in the wrong hands could be dynamite.

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