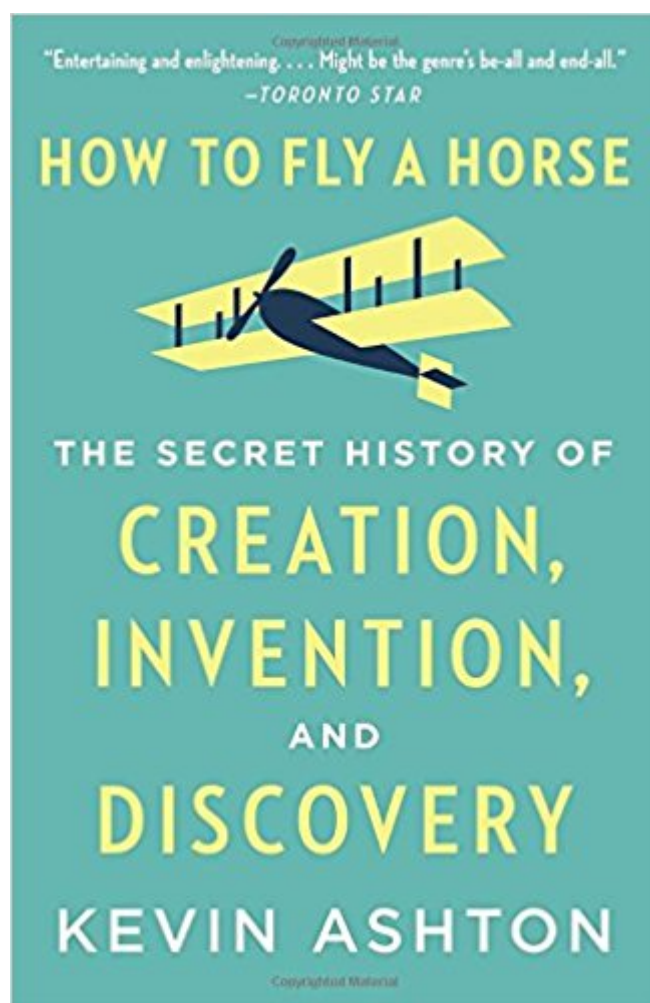


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# How To Fly A Horse: The Secret History Of Creation, Invention, And Discovery



## Synopsis

To create is human. Technology pioneer Kevin Ashton has experienced firsthand the all-consuming challenge of creating something new. Now, in a tour-de-force narrative twenty years in the making, Ashton demystifies the sacred act, leading us on a journey through humanity's greatest creations to uncover the surprising truth behind who creates and how they do it. From the crystallographer's laboratory where the secrets of DNA were first revealed by a long forgotten woman, to the Ohio bicycle shop where the Wright brothers set out to "fly a horse," Ashton showcases the seemingly unremarkable individuals, gradual steps, multiple failures, and countless ordinary and usually uncredited acts that lead to our most astounding breakthroughs. Drawing on examples from Mozart to the Muppets, Archimedes to Apple, Kandinsky to a can of Coke, *How to Fly a Horse* is essential reading for would-be creators and innovators, and also a passionate and immensely rewarding exploration of how "new" comes to be.

## Book Information

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## Customer Reviews

"Entertaining. . . . [E]nlightening. . . . Might be the genre's be all and end all. . . . If you want to tap your creative potential, buy this book. It's the last one you'll ever need to read." —Toronto Star "One of the most creative books on creativity I have ever read, a genuinely inspiring journey through the worlds of art, science, business and culture that will forever change how you think about where new ideas come from."

•William C. Taylor, a cofounder and editor of Fast Company and author of *Practically Radical* “[Ashton’s] is a democratic idea—a scientific version of the American dream. . . . [A]n approachable, thought-provoking book that encourages everyone to be the best they can be.”

•The Guardian (London) “[How to Fly a Horse] takes on creation’s most pernicious clichés. . . . [Ashton] arrives at his theories by dint of his own hard work. . . . Being a genius is hard work. But that spark is in all of us.”

•The Washington Post “An inspiring vision of creativity that’s littered with practical advice, and is a cracking read to boot.”

•BBC Focus “[An] entertaining and inspiring meditation on the nature of creative innovation... Fans of Malcolm Gladwell and Stephen Levitt will enjoy Ashton’s hybrid nonfiction style, which builds a compelling cultural treatise from a coalescence of engaging anecdotes.”

•Booklist “Ashton’s beautifully written exploration of creativity explodes so many myths and opens so many doors that readers, like me, will be left reeling with possibilities. We can all create, we can all innovate. Move over, Malcolm Gladwell; Ashton has done you one better.”

•Larry Downes, author of the New York Times bestseller *Unleashing the Killer App* and co-author of *Big Bang Disruption* “If you have ever wondered what it takes to create something, read this inspiring and insightful book. Using examples ranging from Mozart to the Muppets, Kevin Ashton shows how to tap the creative abilities that lurk in us all. There are no secrets, no shortcuts; just ordinary steps we can all take to bring something new into the world. Ashton’s message is direct and hopeful: creativity isn’t just for geniuses—it’s for everybody.”

•Joseph T. Hallinan, author of *Why We Make Mistakes* “A detailed and persuasive argument for how creativity actually works—not through magical bursts of inspiration but with careful thought, dogged problem-solving, and hard-won insight. Ashton draws on a wealth of illuminating and entertaining stories from the annals of business, science, and the arts to show how any of us can apply this process to our own work.”

•Mason Currey, author of *Daily Rituals: How Artists Work* “If you consider yourself a curious person then you will love this book. Ashton shares so many delightful stories of where things come from and how things came to be, I seriously believe that it will make anyone who reads it smarter.”

•Simon Sinek, New York Times bestselling author of *Start With Why* and *Leaders Eat Last* “How to Fly a Horse solves the mysteries of invention. Kevin Ashton, the innovator who coined the ‘internet of things,’ shows that creativity is more often the result of ordinary steps than extraordinary leaps. With engrossing stories, provocative studies, and lucid writing, this book is not to be

missed. • Adam Grant, professor of management at the Wharton School and New York Times bestselling author of Give and Take • Kevin Ashton's new book How to Fly a Horse is all about the creative sorcery and motivational magic necessary to make impossible things happen in teams or as individuals. Through numerous examples of creative genius ranging from Einstein to the creators of South Park to the invention of jet planes and concertos, Ashton reveals the secrets of the great scientists, artists, and industrialists of the last few centuries. • John Maeda, author of The Laws of Simplicity and founder of the SIMPLICITY Consortium at the MIT Media Lab

Kevin Ashton led pioneering work on RFID (radio frequency identification) networks, for which he coined the term "the Internet of Things" and cofounded the Auto-ID Center at MIT. His writing about innovation and technology has appeared in Quartz, Medium, The Atlantic, and The New York Times.

CREDIBILITY Kevin Ashton was an Executive Director and visiting engineer at MIT, where he led work on computing for computing in the future, which he called "the Internet of Things". This term is now widely used to describe how computers interface with computers, leading to slew of amazing opportunities. He was a leader at three hugely successful technology start ups. This book is not about the internet of things, but I mention his credentials only to emphasise that the man is highly credible. This book is about creativity, the characteristic so needed in a fast changing business environment. It affects our life expectancy, our height and weight and gait, our way of life, where we live, and the things we think and do. Listen, and you hear creation. even the bark of a dog, a wolf changed by millennia of selective breeding by humans; We cannot know enough about it. Read on! Titles available in today's bookstores include 10 Things Nobody Told You About Being Creative, 39 Keys to Creativity 52 Ways to Get and Keep Your Creativity Flowing, 62 Exercises to Unlock Your Most Creative Ideas, 100 What-Ifs of Creativity, and 250 Exercises to Wake Up Your Brain THE MYTH Mozart's greatest symphonies, concertos, and operas came to him complete when he was alone and in a good mood. He needed no tools to compose them. Once he had finished imagining his masterpieces, all he had to do was write them down. But there is a problem. Mozart did not write this letter. It is a forgery. This was first shown in 1856 by Mozart's biographer Otto Jahn and has been confirmed by other scholars since. He sketched his compositions, revised them, and sometimes got stuck. He could not work without a

piano or harpsichord. Geniuses have dramatic moments of insight where great things and thoughts are born whole. Poems are written in dreams. Symphonies are composed complete. The question being investigated was "How do the great men do it?" and the answer had the residue of medieval divine intervention. Even though his talent and a lifetime of practice made him fast and fluent, his work was exactly that: work. CREATIVITY IS WORK. Work is the soul of creation. Work is getting up early and going home late, turning down dates and giving up weekends, writing and rewriting, reviewing and revising, rote and routine, staring down the doubt of the blank page, beginning when we do not know where to start, and not stopping when we cannot go on. There was no magic, and there had been few flashes of inspiration—just tens of thousands of hours of work. THINKING IS LIKE WALKING. This is one reason the creativity myth is so terribly wrong. Creating is not rare. We are all born to do it. There is no "creative thinking," just as there is no "creative walking." Creation is a result—a place thinking may lead us. Before we can know how to create, we must know how to think. STEPS, NOT LEAPS. The best artists, scientists, engineers, inventors, entrepreneurs, and other creators are the ones who keep taking steps by finding new problems, new solutions, and then new problems again. Ordinary thinking works. To Einstein, who was stuck for a year while developing the special theory of relativity. In Einstein's own words: "I was led to it by steps." "The major finding of this study is that no evidence of incubation was apparent under any condition, even under those where its appearance would seem most likely." Most researchers now regard incubation as folk psychology—a popular belief but wrong. Karl Dunker showed, all creation, whether painting, plane, or phone, has the same foundation: gradual steps where a problem leads to a solution that leads to a problem. Creating is the result of thinking like walking. Left foot, problem. Right foot, solution. Repeat until you arrive. It is not the size of your strides that determines your success but how many you take. All great discoveries, even ones that look like transforming leaps, are short hops. INCUBATION. Brainstorming: Researchers in Minnesota tested this with scientists and advertising executives from the 3M Company. In every case, four people working individually generated between 30 to 40 percent more ideas than four people working in a group. Their results were of a higher quality, too: independent judges assessed the work and found that the individuals produced better ideas than the groups. The conclusion: "Group brainstorming, over a wide range of group sizes, inhibits rather than facilitates creative thinking." DON'T BE NEGATIVE! Another assumption of brainstorming is that suspending judgment is better than assessing ideas as they appear. Half of the

groups were told to refrain from criticism and half were told to criticize as they went along. both groups produced the same number of good ideas.

### WORKING ALONE

Steve Wozniak, Steve Jobs's cofounder at Apple and the inventor of its first computer, offers the same advice: "Work alone. You're going to be best able to design revolutionary products and features if you're working on your own. Not on a committee. Not on a team."

### Creation is execution, not inspiration.

### HOW TO FLY A HORSE

the Wright brothers on the path to the world's first flight. They saw an airplane as "a bicycle with wings." The Wrights solved the problem by studying birds. A bird is buffeted by wind when it glides. It balances by raising one wingtip and lowering the other. The Wrights had started flying as a hobby and with little interest in "the scientific side of it." But they were ingenious and easily intrigued. Bird flight, propellers

Orville and Wilbur Wright did not leap into the sky. They walked there one step at a time.

### INTELLIGENCE AND CREATIVITY

What do they have? Behavioral neurologist Richard Caselli says, "Despite great qualitative and quantitative differences between individuals, the neurobiologic principles of creative behavior are the same from the least to the most creative among us." The data currently available about the processes involved in creative and non-creative thinking show no particular differences between the two. Torrance had recorded the IQ of all his participants. His results showed no connection between creative ability and general intelligence. psychologist Ellis Paul Torrance administered a set of tests later known as the Torrance Tests of Creative Thinking: special class of problem-solving activity characterized by novelty, unconventionality, persistence, and difficulty in problem formulation.

### MISCELLANEOUS

the stories reveal a pattern for how humans make new things, Creating is not magic but work.

### CREATING IS ORDINARY

- Creating is not extraordinary, even if its results sometimes are. Creation is human. It is all of us. It is everybody.

### COUNTING CREATORS

- giving credit to individuals is misleading. Creation is a chain reaction: What the numbers show is something else: when we start counting creators, we find that a lot of people create. Anything we create is a tool • a fabrication with purpose. Then came by far the most important moment in human history • the day one member of the species looked at a tool and thought, "I can make this better." The descendants of this individual are called Homo sapiens sapiens. They are our ancestors. They are us. What the human race created was creation itself.

### A MAZE WHERE YOU FAIL AND FAIL TO SUCCEED

There are no shortcuts to creation. The path is one of many steps, neither straight nor winding but in the shape of a maze. Judah Folkman walked the maze. It is easy to enter and difficult

to stay. Until he saved Jennifer's life, Folkman described his work as "a series of repetitive failures." "If your idea succeeds, everybody says you're persistent. If it doesn't succeed, you're stubborn." Folkman saved more lives after Jennifer's. he was lauded as a genius. Folkman could not get published, funded, or perform surgery. It was the same reason other scientists called him a crazy charlatan on a hopeless search, walked out of his talks, said he was working on dirt, and told researchers to avoid him. Stephen King, for example, has published more than eighty books, most of them fiction. 7 He says he writes two thousand words a day. 8 Between the beginning of 1980 and the end of 1999, he published thirty-nine new books, totaling more than five million words. 9 But writing two thousand words a day for twenty years yields fourteen million words: King must erase almost two words for every one he keeps. Dyson It had to be capable of extracting house dust particles about a millionth of a meter wide. It took more than five thousand prototypes, constructed over five years, to create a working cyclone-based vacuum cleaner. He says, "I'm a huge failure because I made 5,126 mistakes." 18 TIME Management writer Peter Drucker: "One of the secrets of productivity (in which I believe whereas I do not believe in creativity) is to have a VERY BIG waste paper basket to take care of ALL invitations such as yours." • productivity in my experience consists of NOT doing anything that helps the work of other people but to spend all one's time on the work the Good Lord has fitted one to do, and to do well. • Time is the raw material of creation. There are few overnight successes and many up-all-night successes. Saying no has more creative power than ideas, insights, and talent combined. The math of time is simple: you have less than you think and need more than you know. Readability Light --- Serious Insights High --- Low Practical High --- Low \* Ian Mann of Gateways consults internationally on leadership and strategy and is the author of Strategy that Works.

How to Fly a Horse had me engrossed and wanting to read page after page from the very beginning. This was a book I had been meaning to pick up and read for quite some time, and when I finally did, I wondered why I didn't start sooner. Essentially, that becomes a prevailing thought that rang through my head as I continued on. Kevin Ashton does a wonderful job keeping you factually entertained via anecdotes about inventions/creativity/discoveries surrounding various topics through the eyes of the known (and unknown/forgotten) creators. The concept of the eureka moment is discussed and swatted away quite effectively. Each lesson you learn from every interaction that is

documented drives home the point that it is time and effort, or work, that spurs on creativity within humans. Each of us has the ability; it is and has been key to our survival and success as a species. You'll learn of some discoveries that you would have never thought twice about, and become enlightened to some of the forgotten, or altered, histories of inventions and ideas. The book's refreshing take on guiding you through the creative process as an aspect of work, and not some magical energy that's just waiting to be tapped into, made me respect the author's history and revisit some of my own personal shortcomings through a new lens. You won't learn any tricks that you haven't learned already, but you may have forgotten how impactful they really are. I highly recommend this book for anyone looking to learn, reflect, and re-illuminate their creative spirit.

Fascinating history of creativity which debunks some myths about it. The parts where women had their inventions appropriated by men were sad, I hope less of that happens today.

Really really enjoyed this book. Very direct about how discoveries or progress really happens, and basically puts the KABOSH on Hollywood's or the media's version of "discoveries". The Wright brothers were mentioned in the book which prompted me to also purchase a biography about them (The Wright Brothers by David McCullough, a very very good author/historian). Yeah, everyone can just stop 'sensationalizing' and get accustomed to the truth on how the world progresses. A must read!

How to fly a Horse is an ode to the creative process. On how we are all standing on top of a culmination of discoveries and inventions and how our greatest achievement as a species is how well we make use of old knowledge to create new one. Creation as the author says, contrary to popular belief, is more about work than talent, grit and learning from mistakes. An amazing sampling of creative history...

Loved this book. Great for really thinking about how you want to spend your creative part of your life. 4 stars because I disagree on some of the basic principles he sets forth. Basically he makes it seem that he thinks you should be willing to sacrifice anything to be creative even your relationships. I disagree with this, but that's my own opinion, so still a very worthwhile read.

A captivating book filled with examples of what the gift of creativity really looks like. Many "overnight" successes are proven to be the result of years of planning and repeated failures.



I absolutely love this book. Just simply terrific and true. If you have ever done anything remotely "creative", you would know from your own experience the "bulb" does not light up with an A-HA moment. Instead, creativity is on par with problem solving. And that is not an easy road. It's work. Mr Ashton's book is one of the rarest now-a-days, in a world flooded with "positive thinking" overload. Read it!

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