

# The Singularity Could Artificial Intelligence Really Out Think Us And Would We Want It To Journal Of Consciousness Studies

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## DILLON BARRON

**The Myth of Artificial Intelligence** Black Inc.  
 Will machines take over the world one day? Will they have human emotions? Will they be our friends or foes? Will they make our lives easier or will they wipe out the human labor force? Readers will come to their own conclusions after reading articles from leading experts forecasting how robots and machines will be integrated into our world, as well as their warnings about how it could all go horribly wrong. Aside from the obvious benefits, the development of artificial intelligence brings up a host of ethical considerations, which are being debated by the world's technology leaders before it's too late.

**The Artificial Intelligence Revolution** Louis a del Monte  
 Elon Musk named Our Final Invention one of 5 books everyone should read about the future A Huffington Post Definitive Tech Book of 2013 Artificial Intelligence helps choose what books you buy, what movies you see, and even who you date. It puts the "smart" in your smartphone and soon it will drive your car. It makes most of the trades on Wall Street, and controls vital energy, water, and transportation infrastructure. But Artificial Intelligence can also threaten our existence. In as little as a decade, AI could match and then surpass human intelligence. Corporations and government agencies are pouring billions into achieving AI's Holy Grail—human-level intelligence. Once AI has attained it, scientists argue, it will have survival drives much like our own. We may be forced to compete with a rival more cunning, more powerful, and more alien than we can imagine. Through profiles of tech visionaries, industry watchdogs, and groundbreaking AI systems, Our Final Invention explores the perils of the heedless pursuit of advanced AI. Until now, human intelligence has had no rival. Can we coexist with beings whose intelligence dwarfs our own? And will they allow us to?

**The Silicon Rapture** Macmillan  
 In The Day AI Becomes God, the author argues his belief not that humanity is doomed in a world under the control of future artificial intelligence (AI), but the opposite: Humanity is surely destined for destruction unless humans cede control to AI.  
**Transhuman Substantiation** Greenhaven Publishing LLC  
 Law today is incomplete, inaccessible, unclear, underdeveloped, and often perplexing to those whom it affects. In The Legal Singularity, Abdi Aidid and Benjamin Alarie argue that the

proliferation of artificial intelligence-enabled technology – and specifically the advent of legal prediction – is on the verge of radically reconfiguring the law, our institutions, and our society for the better. Revealing the ways in which our legal institutions underperform and are expensive to administer, the book highlights the negative social consequences associated with our legal status quo. Given the infirmities of the current state of the law and our legal institutions, the silver lining is that there is ample room for improvement. With concerted action, technology can help us to ameliorate the problems of the law and improve our legal institutions. Inspired in part by the concept of the "technological singularity," The Legal Singularity presents a future state in which technology facilitates the functional "completeness" of law, where the law is at once extraordinarily more complex in its specification than it is today, and yet operationally, the law is vastly more knowable, fairer, and clearer for its subjects. Aidid and Alarie describe the changes that will culminate in the legal singularity and explore the implications for the law and its institutions.

**The Singularity Code** Wes Penre  
 This volume represents the combination of two special issues of the Journal of Consciousness Studies on the topic of the technological singularity. Could artificial intelligence really out-think us, and what would be the likely repercussions if it could? Leading authors contribute to the debate, which takes the form of a target chapter by philosopher David Chalmers, plus commentaries from the likes of Daniel Dennett, Nick Bostrom, Ray Kurzweil, Ben Goertzel, Frank Tipler, among many others. Chalmers then responds to the commentators to round off the discussion.

**The Technological Singularity** Farrar, Straus and Giroux  
 A scientist who has spent a career developing Artificial Intelligence takes a realistic look at the technological challenges and assesses the likely effect of AI on the future. How will Artificial Intelligence (AI) impact our lives? Toby Walsh, one of the leading AI researchers in the world, takes a critical look at the many ways in which "thinking machines" will change our world. Based on a deep understanding of the technology, Walsh describes where Artificial Intelligence is today, and where it will take us. \* Will automation take away most of our jobs? \* Is a "technological singularity" near? \* What is the chance that robots will take over? \* How do we best prepare for this future? The author concludes that, if we plan well, AI could be our greatest legacy, the last invention human beings will ever need to make.

*Artificial Intelligence* Prometheus Books

At the dawn of a new millennium, we find ourselves amidst a technological revolution that is irrevocably transforming our society, economy, and worldview. Advances in areas such as artificial intelligence and robotics drive this revolution-technologies that once belonged to the realm of science fiction but are now a tangible and growing reality. (Singularity and Robotics: The Awakening of Artificial Intelligence. From the Laboratory to the Real World) aims to explore this fascinating and challenging technological landscape. Through its pages, we will embark on a journey that begins in high-tech laboratories where the latest innovations in artificial intelligence and robotics are being forged, and it will lead us to a near future where these technologies could be integrated into every aspect of our daily lives. However, this book is not just a tour of technological wonders in the present and the future. It is also a reflection on what these advances mean for us as a society and as individuals. What will happen when machines can perform all the tasks that humans currently do, and possibly do them better? How will we adapt to a world where artificial intelligence is omnipresent? And, what happens when we reach singularity, the theoretical point at which machines surpass human intelligence? These are complex and challenging questions, and I do not claim to have all the answers. However, my hope is that by exploring these topics, we can begin to better understand the era of artificial intelligence and robotics into which we are entering and chart a path toward a future where humanity and machines can coexist and thrive together. Welcome to the journey toward singularity.

*Singularity* MIT Press  
 Could computers ever really think? They can now drive cars on suburban streets, control spaceships and have even won the Jeopardy! game show. But could they ever be self aware, create original ideas, develop their own goals, and write complex computer programs?. Why can't computers already think? Why has 60 years of research failed to produce a single intelligent robot? What has been learnt, what are the technically difficult problems, and when are they likely to be solved? What would computers think about? What would be their challenges, goals and aspirations? They certainly would not need children. Would they need us? This book addresses the unseen elephant in the room. Computers are becoming ever more intelligent. The future will not be anything like it used to be. The book differs from other recent works by providing a strong focus on what caused people to ultimately be the way we are, namely upon natural selection. It then attempts to predict how natural selection would condition an intelligent machine's behaviour by considering the very different



world that it would experience. Several technical and rhetorical arguments are presented both for and against the hypothesis that computers will, eventually, be able to think. There is also some discussion about what it actually means to be intelligent and the limitations of terms such as "creative" and "self aware". The second and largest part of the book then describes existing AI technologies in some detail. These include symbolic and logic based approaches, Bayesian expert systems, vision, speech, robotics, and an overview of computational neuroscience. This provides a more realistic basis for predictions of the future as well as simply gaining a better understanding of what intelligence actually is. It helps ground abstract philosophical discussions in terms of real, practical technologies. The text is moderately technical while being aimed at the general reader. The book also posits that intelligent machines will be developed as succession of ever more intelligent software tools that are released and used in the real world. The book then analyzes the medium term effects of those semi-intelligent tools upon society. This includes some surprising results from an historical review of existing technologies. There is a growing awareness of these issues, with concerns recently raised by physicist Stephen Hawking, Microsoft founder Bill Gates, and billionaire Elon Musk. 2

#### **The Technological Singularity** Penguin

Will machines take over the world one day? Will they have human emotions? Will they be our friends or foes? Will they make our lives easier or will they wipe out the human labor force? Readers will come to their own conclusions after reading articles from leading experts forecasting how robots and machines will be integrated into our world, as well as their warnings about how it could all go horribly wrong. Aside from the obvious benefits, the development of artificial intelligence brings up a host of ethical considerations, which are being debated by the world's technology leaders before it's too late.

#### **Avogadro Corp** Andrews UK Limited

In 1969, John McCarthy and Pat Hayes uncovered a problem that has haunted the field of artificial intelligence ever since--the frame problem. The problem arises when logic is used to describe the effects of actions and events. Put simply, it is the problem of representing what remains unchanged as a result of an action or event. Many researchers in artificial intelligence believe that its solution is vital to the realization of the field's goals. Solving the Frame Problem presents the various approaches to the frame problem that have been proposed over the years. The author presents the material chronologically--as an unfolding story rather than as a body of theory to be learned by rote. There are lessons to be learned even from the dead ends researchers have pursued, for they deepen our understanding of the issues surrounding the frame problem. In the book's concluding chapters, the author offers his own work on event calculus, which he claims comes very close to a complete solution to the frame problem. Artificial Intelligence series

#### *AI and the Singularity* MIT Press

The applications of Artificial Intelligence lie all around us; in our homes, schools and offices, in our cinemas, in art galleries and - not least - on the Internet. The results of Artificial Intelligence have been invaluable to biologists, psychologists, and linguists in helping to understand the processes of memory, learning, and language from a fresh angle. As a concept, Artificial Intelligence has fuelled and sharpened the philosophical debates concerning the nature of the mind, intelligence, and the uniqueness of human beings. Margaret A. Boden reviews the philosophical and technological challenges raised by Artificial Intelligence, considering whether programs could ever be really intelligent, creative or even conscious, and shows how the pursuit of Artificial Intelligence has helped us to appreciate how human and animal minds are possible.

#### **Artificial Intelligence and the Technological Singularity** CRC Press

"AI and the Technological Singularity: A Fallacy or a Great Opportunity" is a collection of essays that addresses the question of whether the technological singularity--the notion that AI-based computers can program the next generation of AI-based computers until a singularity is achieved, where an AI-based computer can exceed human intelligence--is a fallacy or a great opportunity. The group of scholars that address this question have a variety of positions on the singularity, ranging from advocates to skeptics. No conclusion can be reached, as the development of artificial intelligence is still in its infancy, and there is much wishful thinking and imagination in this issue rather than trustworthy data. The reader will find a cogent summary of the issues faced by researchers who are working to develop the field of artificial intelligence and, in particular, artificial general intelligence. The only conclusion that can be reached is that there exists a variety of well-argued positions as to where AI research is headed.

*Technological singularity, a grandiose dream: A would-be glorious achievement for its proponents, but an idea eliciting second thoughts from the sceptic* Harvard University Press

Writers, inventors and entrepreneurs, impressed by progress in several scientific fields, are debating whether we may be heading for a "singularity" in which machines with super-human intelligence will arise and multiply. In parallel enthusiastic

coverage in the media has widely publicized machines performing sophisticated tasks, from beating the world's chess champion to driving a car, from recognizing animals in videos to beating human experts on quiz shows. These stories have reignited interest in the discipline of Artificial Intelligence, whose goal is to create machines that are as intelligent as humans. First of all, this book provides a "reality check" of sorts on simulating human intelligence and achieving superhuman intelligence. I show that, in a society driven by media that desperately need sensational news to make money and in an academic world increasingly driven by the desire to turn research into Silicon Valley start-ups, technological progress in general, and progress in computer science in particular, is often overrated. I wanted to dispel some notions, and my version of the facts may sound controversial until you read my explanations. For example: non-human intelligence is already among us, and is multiplying rapidly, but it is not a machine. For example: progress in Artificial Intelligence has been negligible and one reason is, ironically, that computers have become so much more powerful. For example: the program of turning machines into humans is not very successful yet, but the program of turning humans into machines (via an almost infinite repertory of rules and regulations) is very successful. The new generations missed the debates of the previous decades (the "Turing test," the "ghost in the machine," the "Chinese room," etc) and some of us think that these new generations, trained in hyper-specialized disciplines, don't have the knowledge to understand them even if they were forced to read them. Therefore it is much easier for the new A.I. practitioners to impress the new generations. I have summarized the various philosophical arguments in favor of and against the feasibility of machine intelligence in my book "The Nature of Consciousness" and i won't repeat them here. I will, however, at least caution the new generations that i "grew up" (as far as cognitive science goes) at a time when the term "intelligence" was not "cool" at all: too vague, too unscientific, too abused in popular literature to lend itself to scientific investigation. In fact, the mother of all problems in this debate is at the very source: "singularity" and "superhuman intelligence" are non-scientific terms based on non-scientific chatting. The term "intelligence" itself is hardly scientific. Ask one hundred psychologists and you will get one hundred different definitions. Ask philosophers and you will get thick tomes written in a cryptic language. Ask neurobiologists and they may simply ignore you. I also feel that this discussion should be complemented with an important (more important?) discussion about the changes in human intelligence due to the increased "intelligence" of machines. This change in human intelligence may have a stronger impact on the future of human civilization than the improvements in machine intelligence. Finally, i am intrigued by another sociological/anthropological aspect of this discussion: humans seem to have a genetic propensity to believe in higher forms of intelligence (gods, saints, UFOs, ...) and the myth of the Singularity could simply be its manifestation in our post-religious 21st century.

#### *The Singularity: Heretic* Three CS

We live in an era of rapidly advancing technology. Artificial Intelligence is becoming increasingly prominent in our daily lives, leading us closer and closer to what the technocrats in Silicon Valley and elsewhere call "The Singularity." None of these should be new to most people, but what does the Singularity entail when we investigate what the technocrats are telling us and where they are heading with their nanotechnology? This book details the transformation of mankind from a biological human to a nanotechnological cyborg. This is not a secret: It is what is openly promoted. Even nature will be transformed into AI if the technocrats get their way. They promise us eternal life, claiming they can replace our vital organs with nanotechnology, and we shall live forever. If this is how it works, is it really what we want? What are the pros and cons of nanotechnology? What will happen to you, as a soul, when your consciousness is uploaded into a Cloud--something that is currently happening to all of us? This book discusses what the technocrats promise us and what they are not telling us. It is time to take a sober look at where we are heading and decide whether this is what we want. This book will also discuss who is most likely behind the entire technocratic movement, and how it has been planned for many centuries by secret societies behind the scenes.

#### **Artificial Intelligence and the Two Singularities** Yale University Press

Volume combining two special issues of the Journal of Consciousness Studies on the philosophical aspects of a possible artificial intelligence singularity.

#### *The Day AI Becomes God* Springer

In Ray Kurzweil's New York Times bestseller *The Singularity is Near*, the futurist and entrepreneur describes the Singularity, a likely future utterly different than anything we can imagine. The Singularity is triggered by the tremendous growth of human and computing intelligence that is an almost inevitable outcome of Moore's Law. Since the book's publication, the coming of the Singularity is now eagerly anticipated by many of the leading thinkers in Silicon Valley, from PayPal mastermind Peter Thiel to Google co-founder Larry Page. The formation of the Singularity University, and the huge popularity of the Singularity website

kurzweilai.com, speak to the importance of this intellectual movement. But what about the average person? How will the Singularity affect our daily lives--our jobs, our families, and our wealth? *Singularity Rising: Surviving and Thriving in a Smarter, Richer, and More Dangerous World* focuses on the implications of a future society faced with an abundance of human and artificial intelligence. James D. Miller, an economics professor and popular speaker on the Singularity, reveals how natural selection has been increasing human intelligence over the past few thousand years and speculates on how intelligence enhancements will shape civilization over the next forty years. Miller considers several possible scenarios in this coming singularity: • A merger of man and machine making society fantastically wealthy and nearly immortal • Competition with billions of cheap AIs drive human wages to almost nothing while making investors rich • Businesses rethink investment decisions to take into account an expected future period of intense creative destruction • Inequality drops worldwide as technologies mitigate the cognitive cost of living in impoverished environments • Drugs designed to fight Alzheimer's disease and keep soldiers alert on battlefields have the fortunate side effect of increasing all of their users' IQs, which, in turn, adds a percentage points to worldwide economic growth Singularity Rising offers predictions about the economic implications for a future of widely expanding intelligence and practical career and investment advice on flourishing on the way to the Singularity.

#### *Surviving AI* Greenhaven Publishing LLC

The noted inventor and futurist's successor to his landmark book *The Singularity is Near* explores how technology will transform the human race in the decades to come Since it was first published in 2005, Ray Kurzweil's *The Singularity is Near* and its vision of an exponential future have spawned a worldwide movement. Kurzweil's predictions about technological advancements have largely come true, with concepts like AI, intelligent machines, and biotechnology now widely familiar to the public. In this entirely new book Ray Kurzweil brings a fresh perspective to advances toward the Singularity--assessing his 1999 prediction that AI will reach human level intelligence by 2029 and examining the exponential growth of technology--that, in the near future, will expand human intelligence a millionfold and change human life forever. Among the topics he discusses are rebuilding the world, atom by atom with devices like nanobots; radical life extension beyond the current age limit of 120; reinventing intelligence by connecting our brains to the cloud; how exponential technologies are propelling innovation forward in all industries and improving all aspects of our well-being such as declining poverty and violence; and the growth of renewable energy and 3-D printing. He also considers the potential perils of biotechnology, nanotechnology, and artificial intelligence, including such topics of current controversy as how AI will impact employment and the safety of autonomous cars, and "After Life" technology, which aims to virtually revive deceased individuals through a combination of their data and DNA. The culmination of six decades of research on artificial intelligence, *The Singularity is Nearer* is Ray Kurzweil's crowning contribution to the story of this science and the revolution that is to come.

#### *The Singularity* Independently Published

Ray Kurzweil has projected the date for a Technological Singularity as 2045. AI researcher Ben Goertzel believes it could potentially happen much sooner, if appropriate attention and resources are focused on the right R&D projects. What current technologies are most likely to lead to the rapid advent of powerful Artificial General Intelligence systems? What impact will the advent of such technologies have upon human life? What philosophical, scientific and spiritual ideas should be deployed to explore such questions? How probable are Terminator type outcomes, versus friendlier scenarios where advanced artificial intelligences play a beneficent role to humanity and other sentiences? What should be our top priorities now, looking forward to a radically different AI-centric future? This book gathers together essays that Ben Goertzel wrote during the period 2009-2011, for H+ Magazine and other periodicals, which explore these issues from various directions. Each essay is presented along with a brief personal introduction discussing the context in which the essay was written, and reviewing relevant developments from the period 2012-2014.

#### **2062** Createspace Independent Publishing Platform

David Ryan is the designer of ELOPe, an email language optimization program, that if successful, will make his career. But when the project is suddenly in danger of being canceled, David embeds a hidden directive in the software accidentally creating a runaway artificial intelligence. David and his team are initially thrilled when the project is allocated extra servers and programmers. But excitement turns to fear as the team realizes that they are being manipulated by an A.I. who is redirecting corporate funds, reassigning personnel and arming itself in pursuit of its own agenda. WINNER SCIENCE FICTION DIY BOOK FESTIVAL 2011-2012 "Avogadro Corp is a tremendous book that every single person needs to read. In the vein of Daniel Suarez's *Daemon* and *Freedom(TM)*, William's book shows that science fiction is becoming science fact. Avogadro Corp describes issues, in solid technical detail, that we are dealing with today that will

impact us by 2015, if not sooner. Not enough people have read these books. It's a problem for them, but not for the [emergent] machines." -- Brad Feld, managing director Foundry Group, co-founder Techstars "Highly entertaining, gripping, thought inspiring book. Don't start without the time to finish — it won't let you go." -- Gifford Pinchot III, founder Bainbridge Graduate Institute, author THE INTELLIGENT ORGANIZATION "An alarming and jaw-dropping tale about how something as innocuous as email can subvert an entire organization. I found myself reading with a sense of awe, and read it way too late into the night." -- Gene Kim, author of VISIBLE OPS "A fictional world where Portland is the hub for the most exciting advancements in technology... [J]am packed with great references to deep Portland culture...and Portlandia-type references" -- SILICON FLORIST  
[The Legal Singularity](#) Oxford University Press

Melanie Mitchell separates science fact from science fiction in this sweeping examination of the current state of AI and how it is remaking our world No recent scientific enterprise has proved as alluring, terrifying, and filled with extravagant promise and frustrating setbacks as artificial intelligence. The award-winning author Melanie Mitchell, a leading computer scientist, now reveals AI's turbulent history and the recent spate of apparent successes, grand hopes, and emerging fears surrounding it. In Artificial Intelligence, Mitchell turns to the most urgent questions concerning AI today: How intelligent—really—are the best AI programs? How do they work? What can they actually do, and when do they fail? How humanlike do we expect them to become, and how soon do we need to worry about them surpassing us? Along the way, she introduces the dominant models of modern AI and machine learning, describing cutting-edge AI programs, their

human inventors, and the historical lines of thought underpinning recent achievements. She meets with fellow experts such as Douglas Hofstadter, the cognitive scientist and Pulitzer Prize-winning author of the modern classic Gödel, Escher, Bach, who explains why he is "terrified" about the future of AI. She explores the profound disconnect between the hype and the actual achievements in AI, providing a clear sense of what the field has accomplished and how much further it has to go. Interweaving stories about the science of AI and the people behind it, Artificial Intelligence brims with clear-sighted, captivating, and accessible accounts of the most interesting and provocative modern work in the field, flavored with Mitchell's humor and personal observations. This frank, lively book is an indispensable guide to understanding today's AI, its quest for "human-level" intelligence, and its impact on the future for us all.

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