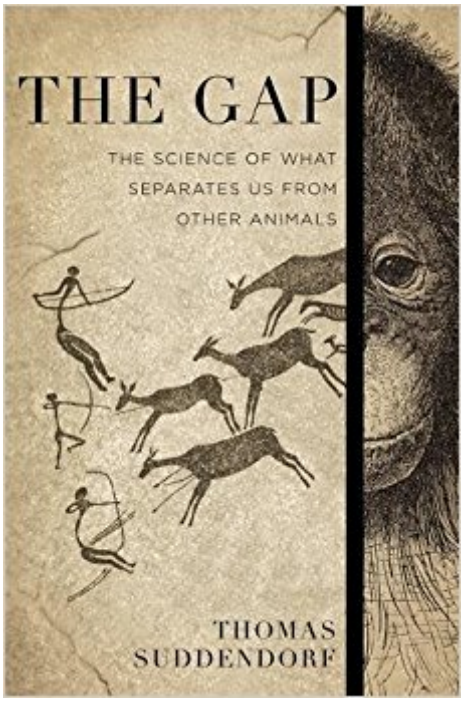
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The Gap: The Science Of What Separates Us From Other Animals



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Synopsis

There exists an undeniable chasm between the capacities of humans and those of animals. Our minds have spawned civilizations and technologies that have changed the face of the Earth, whereas even our closest animal relatives sit unobtrusively in their dwindling habitats. Yet despite longstanding debates, the nature of this apparent gap has remained unclear. What exactly is the difference between our minds and theirs?In The Gap, psychologist Thomas Suddendorf provides a definitive account of the mental qualities that separate humans from other animals, as well as how these differences arose. Drawing on two decades of research on apes, children, and human evolution, he surveys the abilities most often cited as uniquely human—language, intelligence, morality, culture, theory of mind, and mental time travel—and finds that two traits account for most of the ways in which our minds appear so distinct: Namely, our open-ended ability to imagine and reflect on scenarios, and our insatiable drive to link our minds together. These two traits explain how our species was able to amplify qualities that we inherited in parallel with our animal counterparts; transforming animal communication into language, memory into mental time travel, sociality into mind reading, problem solving into abstract reasoning, traditions into culture, and empathy into morality.Suddendorf concludes with the provocative suggestion that our unrivalled status may be our own creation—and that the gap is growing wider not so much because we are becoming smarter but because we are killing off our closest intelligent animal relatives.Weaving together the latest findings in animal behavior, child development, anthropology, psychology, and neuroscience, this book will change the way we think about our place in nature. A major argument for reconsidering what makes us human, The Gap is essential reading for anyone interested in our evolutionary origins and our relationship with the rest of the animal kingdom.

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Customer Reviews

To determine what distinguishes the mental capabilities of humans from those of our closest living relatives (chimpanzees and great apes), Australian psychologist Suddendorf uses diverse data drawn from the worlds of human developmental theory, infant and child psychology, and primate ethology to walk a moderate line between Ã¢â Â¬Ã…â œromanticÃ¢â Â¬ and Ã¢â Â¬Ã…â œkilljoyÃ¢â Â¬ interpretations of animal Ã¢â Â¬Ã…â œbehavior as an indicator of mind.Ã¢â Â¬ He explores six realms in which human thinking appears to be qualitatively different from that of animalsÃ¢â ¬â •Ã¢â Â¬Ã…â œlanguage, mental time travel, mind reading, intelligence, culture, and moralityÃ¢â Â¬Ã¢â ¬â •and finally locates the gap in the interaction between two key mental capacities: nested scenario building and the urge to connect. His analysis of the of the gap's development is much more straightforward, as he digs into evolutionary theory, molecular evidence, and the fossil record to show interbreeding and physical signs of intermediate capacities in early hominin species, positing that we Homo sapiens widened the gap by murdering our nearest evolutionary neighbors. His musings provoke thought about humanity's place in the community of life, and he considers whether a rich or lean interpretation of the inner worlds of the creatures around us serves us best. (Nov.)

“An excellent work which probably stands alone in its field.Ã¢â ¬Â•—Richard Leakey“[A] sure-handed, fascinating book.Ã¢â ¬Â•—Scientific American Mind“Thought-provoking.Ã¢â ¬Â•—Top 10 Science and Tech Books for November, The Guardian (UK)“Wonderful.... Important and beautifully written.Ã¢â ¬Â•—Journal of the History of Biology“Bringing together the latest research in animal behavour, child development, anthropology, psychology and neuroscience, Suddendorf makes you think about our place in nature and puts forward a provocative argument for reconsidering what makes us human.Ã¢â ¬Â•—The Vegetarian (UK)“Fascinating reading.... A fine example of science made accessible for general readers, combining history, personal anecdotes, clear accounts of research and a broad picture of human evolution.Ã¢â ¬Â•—Kirkus Reviews“A compelling synthesis of the current literature on human evolution and comparative psychology to address the big questions of our species' uniqueness. Fittingly, if the origin of human potential

began with our ability for imaginative storytelling, Suddendorf's narrative is an excellent addition to our species' legacy.Ã¢â ¬Â•—Times Higher Education“In his admirably clear and cogent first book The Gap: The Science of What Separates Us from Other Animals [Suddendorf] seeks a middle way that does justice to other species while arguing that there really are important differences between us and them.... Suddendorf's book is a fine introduction to this fascinating field and deserves a wide audience.Ã¢â ¬Â•—Financial Times“Our success as a dominant species, [Suddendorf] says, has depended on our ability to imagine and communicate. But he goes further, suggesting that the gap between humans and animals is widening, not because we are becoming smarter but because we are killing off our closest intelligent animal relatives. Suddendorf brilliantly fills in the gap with telling detail and acute analysis.Ã¢â ¬Â•—The Times (UK)“Fascinating....enjoyable....would make [a] marvellous gift.Ã¢â ¬Â•—NatureA PUBLISHERS WEEKLY Top 10 Fall Science TitleA BBC FOCUS Editor’s Choice“[The Gap] provides a new lens through which to see the world. Read it, and you might never look at yourself or your household pets in the same light.Ã¢â ¬Â•—Science Magazine“A rewarding, thought-provoking journey.... Mr. Suddendorf cuts an entertaining swath through a thicket of research studies on primate cognition.... The author's style is not only consistently interesting and informative but at times delightfully playful.... A welcome addition to the growing literature explaining science to the intelligent layperson.Ã¢â ¬Â•—Wall Street Journal"Suddendorf is a skillful guide through ’the gap’ between animal and human minds. He describes clever animal experiments and observational work with lucidity. He ends with a plea. Our ape cousins are dying out. It's vital that we use our unique powers of foresight to prevent the gap from widening. [Five stars]"—BBC Focus

There arenÃƒÂ¢Ã â ¬Ã â„¢t many questions bigger than: ÃƒÂ¢Ã â ¬Ã ËœWhat makes our minds so different to other animals? According to some pundits, more information has been produced in this century than has accrued in all the millennia before and itÃƒÂ¢Ã â ¬Ã â„¢s expected to go on exploding. So how do you make sense of the deluge? One way is to find people, who you trust to have the deepest, wisest, latest stuff worth weaving into your own big picture. Thomas Suddendorf brings established facts from a range of fields, such as palaeoanthropology, linguistics and genetics to his own fields of evolutionary psychology and child development to craft a powerfully persuasive argument for the evolutionary course of what he refers to as ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢ ÃƒÂ¢Ã â ¬Ã â œ the mental gap between our closest relatives, the great apes, and us.Central to his quest is the identification of the building

blocks of the mind, which he broadly defines as the ability to think of things which are beyond our immediate perception. To establish the base of the gap he applies tests developed by famed child psychologist Piaget to chimpanzees, orangutans and gorillas and finds that they are able to meet the tasks of PiagetÃƒÂ¢Ã â ¬Ã â„¢s last object permanence task (called 6b!).
ÃƒÂ¢Ã â ¬Ã ËœLike human two-year-olds, but unlike other primates, adult great apes have demonstrated that they can think about things they did not perceive.ÃƒÂ¢Ã â ¬Ã â„¢ They pass the test of a mind by inferring a probable place for an object they can no longer perceive. Having gauged the lower limits of ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢ he probes for the upper limits: ÃƒÂ¢Ã â ¬Ã Ëœkey uniquely human attributes that may have led to a profound shift in human behaviourÃƒÂ¢Ã â ¬Ã â„¢. He divides human behaviour into six domains: language, mental time travel, mind reading, intelligence, culture, and moralityÃƒÂ¢Ã â ¬Ã â„¢However, his exploration of the domains of ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢ reveals another gap ÃƒÂ¢Ã â ¬Ã â œ a gap in the mental apparatus of humans that has diverged over the last eight million years or so. As the inner gap divided and widened in our ancestors, like two legs of a mental system evolving in tandem, it opened ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢ between us and our nearest relatives. Along one leg there is an increasing complexity of scenarios which our ancestors could hold as ÃƒÂ¢Ã â ¬Ã Ëœpretend perceptionsÃƒÂ¢Ã â ¬Ã â„¢. Along the other leg there is a complimentary drive to influence the contents of the mind of others - most evidently in the evolution of language and its group phenomenon called culture. In between he stirs up a pot of intriguing quandariesÃƒÂ¢Ã â ¬Ã Â|Here are a couple of examples that stirred my thinking.
ÃƒÂ¢Ã â ¬Ã ËœGreat apesÃƒÂ¢Ã â ¬Ã Â| have been shown to delay gratificationÃƒÂ¢Ã â ¬Ã â„¢ and ÃƒÂ¢Ã â ¬Ã Ëœfor a reward forty times larger than the immediate reward option, chimpanzees may wait up to eight minutes.ÃƒÂ¢Ã â ¬Ã â„¢ It seems that while most other animals use the past to influence the present ÃƒÂ¢Ã â ¬Ã â œ great apes also use the past to influence the future. So if a two year old child already has a mental mechanism similar in sophistication to an adult chimpanzee ÃƒÂ¢Ã â ¬Ã â œ yet has perhaps another thirty years to go, (a recent study he refers to indicates that some parts of our brains donÃƒÂ¢Ã â ¬Ã â„¢t complete development till mid-thirties) then have we the intelligence to unravel such an intricate development of intelligence? And, then, looking at the bigger picture, why were our ancestors so driven by nature to break completely the bonds of time and space ÃƒÂ¢Ã â ¬Ã â œ to imagine anything they wanted? He notes where this rapid selection has occurred in the brain: ÃƒÂ¢Ã â ¬Ã ËœFor example, brain imaging studies have found that when participants are asked to recall past events and imagine future scenarios, the same areas of the

brain ÃƒÂ¢Ã â ¬Ã Â¦ are involved.ÃƒÂ¢Ã â ¬Ã Ëœ How stable is such a recent realignment of cognitive abilities? How vulnerable is our new-fangled imagination apparatus to mass delusion and exploitation? Do we have the intelligence to untangle the truth of us?In an example from the domain of morality Suddendorf notes that ÃƒÂ¢Ã â ¬Ã Ëœevolution works only on how memory influences fitness, not for how accurately memory reflects the past per se.ÃƒÂ¢Ã â ¬Ã â„¢ Later he quotes Darwin: ÃƒÂ¢Ã â ¬Ã ËœThe highest possible stage in moral culture is when we recognise that we ought to control our thoughts.ÃƒÂ¢Ã â ¬Ã â„¢ But Darwin was writing nearly 150 years ago, when knowledge was still mostly gained through experience and private reading. HasnÃƒÂ¢Ã â ¬Ã â„¢t the nature of the source and hence the control of knowledge changed dramatically since then? Are we discussing the fitness of a morality made by individuals to a culture that is as naked as nature intended for over tens of millions of years? Or are we swept along in a ÃƒÂ¢Ã â ¬Ã Ëœblue pillÃƒÂ¢Ã â ¬Ã â„¢ morality, our natures tailored, enculturated, deformed by institutions for the fitness of the modern state in its Darwinian struggle for political domination of this planet?There are many other mind stretchers but the crux at the ÃƒÂ¢Ã â ¬Ã ËœcrotchÃƒÂ¢Ã â ¬Ã â„¢ of SuddendorfÃƒÂ¢Ã â ¬Ã â„¢s ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢ is: will it narrow, stay the same or widen? He goes for a wider gap ÃƒÂ¢Ã â ¬Ã â œ for two possible reasons ÃƒÂ¢Ã â ¬Ã â œ the extinction of our great ape relatives and so the gap extends to monkeys or/and we extend those legs and get to increase our intelligence. He cites the Flynn effect. But there is another prospect ÃƒÂ¢Ã â ¬Ã â œ ironically built on the baby like belief ÃƒÂ¢Ã â ¬Ã â œ out of mind, out of sight, the ÃƒÂ¢Ã â ¬Ã Ëœunmentionable gapÃƒÂ¢Ã â ¬Ã â„¢, the forbidden thought -that humans have speciated since they began escaping Africa. At the end of this mindless gap is the final scenario - the spectre of the last man to know ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢.His Faustian spirit shines through his big picture (or is it meta scenario) with observations made with love, curiosity and a willingness to go wherever hard reality takes him. His research and his collaborations around the world ÃƒÂ¢Ã â ¬Ã â œ and his real life adventures ÃƒÂ¢Ã â ¬Ã â œ bring the frontier of neuroscience to the independent thinker. A few books are worth the extra time of a deep read. This is one of them. Because he takes our view of us and animals to the frontier; a frontier from where we might see far enough to change the fate of ÃƒÂ¢Ã â ¬Ã Â¦ ÃƒÂ¢Ã â ¬Ã ËœThe GapÃƒÂ¢Ã â ¬Ã â„¢.

This book seeks to answer the curious question of why human beings apparently have no close relatives on the evolutionary tree. After all, evolution is a painstaking slow process of incremental accumulation of genetic mutations that eventually differentiate the species. Most species have many

close relations.So why is there only one species of human beings extant, and no other species even comes close to what weÃƒÂ¢Ã â ¬Ã â„¢ve accomplished in the way of obtaining dominion over the Earth?The traditional theoretical answers are:1. (Religious) Man is a divine creation who was DESIGNED to be different from every other species.2. There WERE until recently (a few tens of thousands of years ago) several species of hominids but homo sapiens eliminated them by:A) Interbreeding with them.B) Exterminating themC) Gently outcompeting them so that over a period of hundreds of thousands of years we gradually became the dominant hominidD) All of the above.3. Perhaps we do have closely related species (apes and orangutans) who look more different to us than they really are. An alien from another planet might consider them to be just another subspecies of hominid. Recent observations of apes in captivity and the wild have revealed cooperative behaviors all to similar to the ÃƒÂ¢Ã â ¬Ã Å“politickingÃƒÂ¢Ã â ¬Ã Â• that goes on all the time in human societies.These theories have been discussed so often in recent years that I was a bit reluctant to buy this book.However after previewing it in Kindle, Author Thomas SuddendorfÃƒÂ¢Ã â ¬Ã â„¢s logic is so well stated and his writing is so entertainingly lucid that I could not resist purchasing the book and making time to read it at a leisurely pace so as to comprehend it fully. It turned out to be an enjoyable and informative read from cover to cover.Suddendorf begins by pointing out the obvious --- that the ÃƒÂ¢Ã â ¬Ã Å“gapÃƒÂ¢Ã â ¬Ã Â• between man and all other creatures is in the brain and the mind. He provides a good account of recent research that has identified the specific biological differences in the neuron structure of human brains vs. our mammalian cousins. He then explores the psychological differences between the way that human beings and the lower primates appear to think.Suddendorf warns us not to jump to any quick conclusions about the gap between the thinking process in humans and animals. We barely understand how human beings cogitate (conscious vs. unconscious), so letÃƒÂ¢Ã â ¬Ã â„¢s not imagine that we can be certain how animals comprehend their world. With that caveat in mind he relates many experiments with the higher primates that APPEAR to show cognitive abilities in animals. He comes close to pinpointing the dimensions of the gap that exist between the more intelligent animals (horses, dogs, apes, and dolphins) and human beings.The gap appears to be both smaller and larger than one may have suspected. In the social sense the gap appears small. Suddendorf points out that chimpanzees have developed highly politicized societies whereby individuals are preoccupied with their social standing. They appear able to "model the minds" of others in their group and thereby know how to advance their social standing by appeasing or deceiving them. Several individuals may cooperate together to advance their common interests, such as by conspiring to kill the dominant alpha male

and replacing him with a new hierarchy.Some societies of chimps act exactly like human gangs, terrorizing rivals with torture and murder who intrude on their turf. Other societies of chimps appear to be ÃƒÂ¢Ã â ¬Ã Å“hippiesÃƒÂ¢Ã â ¬Ã Â• whoÃƒÂ¢Ã â ¬Ã â„¢d rather make love rather than war.In their capacity to form social hierarchies the gap between these animals and us seems quite small. But in terms of abstract thinking --- the ability to theorize about how to improve on their environments through artificial constructs, the gap is large.======CONSIDER ONE OF THE MOST fundamental aspects of our human mind: we can imagine things other than what is available to the senses. We can picture past, future, and entirely fictional worlds and think about them. William James noted that it is the capacity to conceive of alternatives that allows us to question why things are the way they are. Humans ask big questions like: what are we, where do we come from, and where are we going? Most cultures have elaborate creation myths that children are told when they start raising these questions.Questioning and finding meaning are essential to the human mind. (Why else are you reading this?) But what about animals? Do they ponder past, future, or fictional events? Do they search for the meaning of life? Can they conjure up worlds beyond what they can perceive here and now? Do they have even the most basic imagination? How could we find out?=======The book accomplishes its goal of defining what the gap is between human and animal intelligence. It also provides a ÃƒÂ¢Ã â ¬Ã Å“101ÃƒÂ¢Ã â ¬Ã Â• education about the evolution of human intelligence during the past 10 million years. And it has some fun with projecting where evolution might take our intelligence in the future.The writing style is enables a layperson to obtain a good general understanding of whatÃƒÂ¢Ã â ¬Ã â„¢s current in science of human evolution and the specific brain structures and cognitive differences that gives Man the dominion of the earth.

Eye opening look at what makes us human. The author is quite passionate about the topic. He approaches the subject with a critical eye and an open mind. He does contradict himself a bit. For example, he says that when people don't pay taxes, they are stealing from others, but taxes are themselves a form of theft-a powerful government entity users violence or the threat of force against peaceful citizens to take their personal property against their will. Later he refers to himself as a pacifist. A true pacifist would not support the use of force to seize personal property. Even with this I would have given five stars, but his narration was sometimes repetitive, and he could have provided a clearer definition and summary of what makes humans different. He had categories and subcategories which are not entirely clear. I do recommend the book, and I will be keeping it as a reference. I have shared a lot of what I lived about it with my friends, and it is fascinating.

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