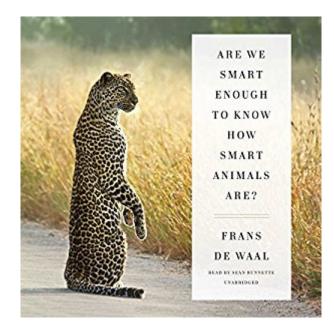


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# Are We Smart Enough To Know How Smart Animals Are?





### Synopsis

From world-renowned biologist and primatologist Frans de Waal comes this groundbreaking work on animal intelligence destined to become a classic. What separates your mind from an animal's? Maybe you think it's your ability to design tools, your sense of self, or your grasp of past and future all traits that have helped us define ourselves as the planet's preeminent species. But in recent decades, these claims have been eroded - or even disproved outright - by a revolution in the study of animal cognition. Take the way octopuses use coconut shells as tools; elephants that classify humans by age, gender, and language; or Ayumu, the young male chimpanzee at Kyoto University whose flash memory puts that of humans to shame. Based on research involving crows, dolphins, parrots, sheep, wasps, bats, whales, and of course chimpanzees and bonobos, Frans de Waal explores both the scope and the depth of animal intelligence. He offers a firsthand account of how science has stood traditional behaviorism on its head by revealing how smart animals really are and how we've underestimated their abilities for too long. People often assume a cognitive ladder from lower to higher forms, with our own intelligence at the top. But what if it is more like a bush, with cognition taking different, often incomparable forms? Would you presume yourself dumber than a squirrel because you're less adept at recalling the locations of hundreds of buried acorns? Or would you judge your perception of your surroundings as more sophisticated than that of an echolocating bat? De Waal reviews the rise and fall of the mechanistic view of animals and opens our minds to the idea that animal minds are far more intricate and complex than we have assumed. De Waal's landmark work will convince you to rethink everything you thought you knew about animal - and human - intelligence.

#### **Book Information**

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#### **Customer Reviews**

There is (yet another) fight raging in science. This one is over how we evaluate other vertebrates. In this fascinating and eye-opening compendium, Frans de Waal says we are prejudiced towards ourselves, always comparing animals  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A} \hat{a}_{,,\phi}\phi$  performance to ours, in unfairly biased experiments designed for us. It bothers people that we are not unique, and it bothers de Waal that animals don $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{,,\phi}$ t get the credit they deserve. Ranging all over the world and all over species, the book is an endless marvel de Waal gives the example of a chimp named Ayumu at a research center in Japan, who can routinely memorize nine numbers in any given order, having seen them for just one fifth of one second. He can then pick them out in order from random numbers presented to him all over the computer screen. No human comes close. That  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{\mu}\phi$ s a problem for a lot of scientists. The book is full of examples of animals, birds and fish doing highly intelligent things naturally. Our tests twist and pervert their skills to fit the test, showing them less intelligent than they are. We draw the wrong conclusions, often by asking the wrong questions. de Waal shows the way to a far more appreciative and objective way of looking at the world.My own favorite story in prejudice occurred when scientists induced pain in the feet of mice to see if they could be made to hide it. They found that mice could put on a brave face, but only when a human male tended to them. For females, they let their guard down; they freely showed their suffering. The difference was so strong that it worked even when scientists simply placed a man $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{\mu}\phi$ s t-shirt near the cage. The mice were totally focused on fear and ignored their own pain. This said two things: mice could hide their own pain, and every experiment using mice is to some extent invalid, prejudiced by the mere presence of humans. Male or female scientists will cause different results. To that story, de Waal adds attention, motivation, and especially cognition, giving animals the full range of unlimited possibility, including communication (bottlenose dolphins call to each other by name). It is actually true respect. Possibly the most telling sentence about primates (de Waal $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A} \hat{a}_{\mu}\phi$ s focus) is that the caretakers in a primate center have greater respect for the intelligence of the animals than do the psychologists and philosophers who run the experiments. Every being is magnificently adapted to its habitat and

needs. That they have different strengths, some or none of which might also be present in humans, is basically irrelevant. The whole field of comparative psychology, where we test how animals measure up to humans, is irrelevant and invalid. We need to appreciate the possible, not the

Are We Smart Enough to Know How Smart Animals Are? By Frans de Waal $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$  Å"Are We Smart Enough to Know How Smart Animals Are? $\tilde{A}f\hat{A}\phi\tilde{A} = -\tilde{A}\hat{A} + is$  an insightful look at animal intelligence backed up by evidence from controlled experiments. Dutch/American biologist with a Ph.D. in zoology and ethology and author of Our Inner Ape and others, Frans de Waal, takes the reader on a journey of the sophistication of nonhuman minds. This entertaining 352-page book includes the following nine chapters: 1. Magic Wells, 2. A Tale of Two Schools, 3. Cognitive Ripples, 4. Talk to Me, 5. The Measure of all Things, 6. Social Skills, 7. Time Will Tell, 8. Of Mirrors and Jars, and 9. Evolutionary Cognition. Positives: 1. Engaging and well-written book that is accessible to the masses.2. A fascinating topic in the hands of a subject matter expert, nonhuman cognition.3. Entertaining and insightful. The book is easy to follow. Professor de Waal is fair and even handed. He is careful to not oversell nonhuman cognition while providing a mixture of stories, experiments and observations to back his points.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $-\tilde{A}$   $\dot{A}$ "I will pick and choose from among many discoveries, species, and scientists, so as to convey the excitement of the past twenty vears.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} - \tilde{A}$   $\hat{A}$   $\cdot$ 4. Includes many sketches that complement the excellent narrative.5. Introduces and explains key new terms.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$  Å"Umwelt stresses an organism $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{,,\phi}$  self-centered, subjective world, which represents only a small tranche of all available worlds.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$ •6. Does a wonderful job of explaining the most important topic of this book, animal cognition.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $-\tilde{A}$  A "No wonder Griffin became an early champion" of animal cognition  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{a}$  •a term considered an oxymoron until well into the 1980s $\tilde{A}f\hat{A}c\hat{A}\hat{a}$   $\neg \tilde{A}\hat{a}$  because what else is cognition but information processing? Cognition is the mental transformation of sensory input into knowledge about the environment and the flexible application of this knowledge.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$ •  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$ "While the term cognition refers to the process of doing this, intelligence refers more to the ability to do it successfully. Af ¢A â ¬A •7. A look into experimental science. Af ¢A â ¬A Å"The credo of experimental science remains that an absence of evidence is not evidence of absence.  $\tilde{A}f\hat{A}c\hat{A}\hat{a} - \tilde{A}\hat{A}\cdot 8$ . One of the recurring themes of this wonderful book is the importance of conducting well-constructed experiments.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$  Å"Their earlier poor performance had had more to do with the way they were tested than with their mental powers.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$ •  $\tilde{A}f\hat{A}\phi\tilde{A}$  â  $\neg\tilde{A}$  Å"The challenge is to find tests that fit an animal  $\tilde{A}f\hat{A}\phi\tilde{A}$  â  $\neg\tilde{A}$  â,  $\phi$ s temperament, interests, anatomy, and sensory capacities.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ •9. A fascinating look at the field of evolutionary cognition.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ "The field of evolutionary cognition requires us to consider

every species in full.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ •10. One of the most important topics covered is the notion of continuity.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} - \tilde{A}$  A"It is far more logical to assume continuity in every domain, Griffin said, echoing Charles Darwin $\tilde{A}f\hat{A}\phi\hat{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{\mu}\phi$ s well-known observation that the mental difference between humans and other animals is one of degree rather than kind.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$ •11. Explains key differences between behaviorism and ethology.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$  Å"The difference between behaviorism and ethology has always been one of human-controlled versus natural behavior. Behaviorists sought to dictate behavior by placing animals in barren environments in which they could do little else than what the experimenter wanted  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$ •12. The book provides interesting examples that includes animals beyond de Waal $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A} \hat{a}_{,,\phi}cs$  expertise of primates.  $\tilde{A}f\hat{A}\phi\hat{A}$   $\hat{a} - \tilde{A} \hat{A}$  "With animals such as chimpanzees, elephants, and crows, for which we have ample evidence of complex cognition, we really do not need to start at zero every time we are struck by seemingly smart behavior.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A}$   $\hat{A}$ •13. Provocative questions. Do animals have culture? Find out.14. Provides evidence for animal cognition.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A} \dot{A}$  "A century ago Wolfgang  $K\tilde{A}f\hat{A}$  hler set the stage for animal cognition research by demonstrating that apes can solve problems in their heads by means of a flash of insight, before enacting the solution.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A} \cdot \tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ "Apes do not just search for tools for specific occasions: they actually fabricate them.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ •15. The pioneers of animal cognition.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A} \hat{A}$ "Nadia Ladygina-Kohts was a pioneer in animal cognition, who studied not only primates but also parrots, such as this macaw. Working in Moscow at around the same time that  $K\tilde{A}f\hat{A}$  hler conducted his research, she remains far less known  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A}$   $\hat{A}$  +16. The amazing story of Ayumu.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ "Ayumu $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{,,\phi}$ s photographic memory allows him to guickly tap a series of numbers on a touchscreen in the right order, even though the numbers disappear in the blink of an eye. That humans cannot keep up with this young ape has upset some psychologists.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ •17. An interesting look at social skills.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ "The cooperative pulling paradigm, as it is known, has been applied to monkeys, hyenas, parrots, rooks, elephants, and so on  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A} \hat{A} \cdot \tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A} \hat{A}$  "In the end, we found proof in the pudding that chimpanzees are highly cooperative. They have no trouble whatsoever regulating and dampening strife for the sake of achieving shared outcomes.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$ •18. Do animals plan ahead?  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$  Å"This study was quite ingenious and included a few additional controls, leading the authors to conclude that jays recall what items they have put where and at what point in time.  $\tilde{A}f\hat{A}\phi\tilde{A} = A \hat{A} + \tilde{A}f\hat{A}\phi\tilde{A} = A \hat{A} + \tilde{A}f\hat{A}\phi\tilde{A}$  the set of t a place where she knows there are nuts. After collecting the nuts, she continues her trek to the only large slab of rock in the area, where she employs her rock as a hammer to crack the nuts. Picking

up a tool so long in advance suggests planning.  $\tilde{A}f\hat{A}c\tilde{A}$   $\hat{a} - \tilde{A}$   $\hat{A}$ •19. The intelligence of elephants.  $\hat{A}f\hat{A}\phi\hat{A}$   $\hat{a} - \hat{A} \hat{A}$ "In short, elephants make sophisticated distinctions regarding potential enemies to the point that they classify our own species based on language, age, and gender. How they do so is not entirely clear, but studies like these are beginning to scratch the surface of one of the most enigmatic minds on the planet.  $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a}$   $\neg\tilde{A}$   $\hat{A}$  20. The three divided attitudes on animal cognition: slayers, skeptics, and the proponents.21. Notes and bibliography included.Negatives:1. The scientific process needed to be explained in more detail and specifically how it relates to the study of primates. An appendix explaining de Waal $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{a}_{\mu}\phi$ s overall scientific approach would have been helpful.2. Lacks supplementary visual materials such as diagrams, charts and graphs. A chart depicting the different types of primates with key statistics as an example. Maps showing where the main subjects come from.3. On the topic of neuroscience a little more depth was warranted. Once again, visual material would have complemented the narrative.4. The format could have been enhanced to highlight the most noteworthy observations or facts. In summary, this was a very entertaining book. Professor De Waal succeeds in entertaining and educating the public on animal cognition. His mastery of the topic is admirable and is careful to be grounded on the facts and not to oversell an idea. A lot of interesting insights don $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} - \tilde{A} \hat{a}_{,,\phi}$ t miss this one. I recommend it!Further recommendations:  $\tilde{A}f\hat{A}c\tilde{A} \hat{a} - \tilde{A} \hat{A}$ "The Bonobo and the AtheistĂf¢Ă ⠬à •, Ăf¢Ă ⠬à Å"Our Inner ApeĂf¢Ă ⠬à •, Ăf¢Ă ⠬à Å"The Age of Empathy à f¢Ã ⠬à •, à f¢Ã ⠬à Å"Chimpanzee Politics à f¢Ã ⠬à • by the same author,  $\tilde{A}f\hat{A}\phi\tilde{A}$  â  $\neg\tilde{A}$  Å"The Genius of Birds $\tilde{A}f\hat{A}\phi\tilde{A}$  â  $\neg\tilde{A}$  Å• by Jennifer Ackerman,  $\tilde{A}f\hat{A}\phi\tilde{A}$  â  $\neg \tilde{A}$  Å"Beyond Words: What Animals Think and Feel $\tilde{A}f\hat{A}\phi\tilde{A}$  â  $\neg \tilde{A}$  Å• by Carl Safina,  $\tilde{A}f\hat{A}\phi\tilde{A} = \Lambda \tilde{A}$  A"The Soul of an Octopus $\tilde{A}f\hat{A}\phi\tilde{A} = \Lambda \tilde{A} + \delta \Phi$  Sy Montgomery,  $\tilde{A}f\hat{A}\phi\tilde{A} = \Lambda \tilde{A}^{*}$ Animal Wise $\tilde{A}f\hat{A}\phi\tilde{A} = \Lambda \tilde{A}^{*}$  by Virginia Morell, Ăf¢Ă ⠬à Å"ZoobiquityĂf¢Ă ⠬à • by Barbara Natterson-Horowitz, Ăf¢Ă ⠬à Å"The Secret Lives of Bats  $\tilde{A}f \hat{A} \phi \tilde{A} \hat{a} \neg \tilde{A} \hat{A} \cdot$  by Merlin Tuttle, and  $\tilde{A}f \hat{A} \phi \tilde{A} \hat{a} \neg \tilde{A} \hat{A} \cdot$  Last Ape Standing $\tilde{A}f\hat{A}\phi\tilde{A}$   $\hat{a} \neg \tilde{A}$   $\hat{A}$  by Chip Walter.

I truly hated one thing about this book - it ended! Now I have to read everything else Frans de Wall has written and I'll never get the laundry done. A powerful and important book. So many fascinating stories, examples, experiments and all of it written in clear, concise language that even I could follow. Elephants, ravens, dolphins, wasps, chimps, oh my! I vividly remember my 8th grade science teacher telling the class that what separated us from animals was our ability to make and use tools. Oops.I especially was drawn to the idea that learning depends more on social connections than

incentives. Throw away those stickers! Rapport trumps rewards every time. If I were in charge of the world, I'd make this required reading for every teacher.We have a very narrow "umwelt" indeed.

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