

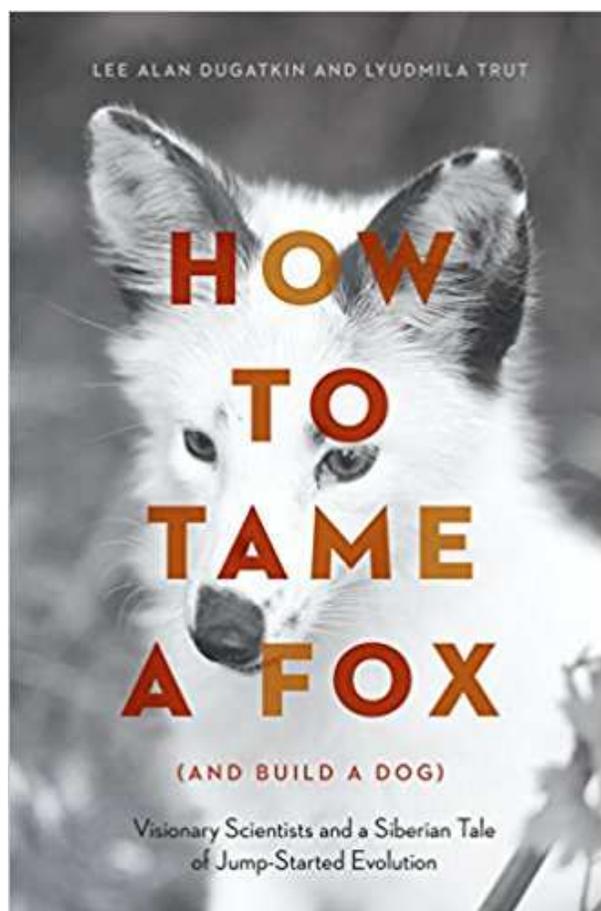
Book Review

A Tale of Science, Passion and Politics

A Review of:
How to Tame a Fox (and Build a Dog)
Visionary Scientists and a Siberian Tale of Jump-Started Evolution

By
Lee Alan Dugatkin and Lyudmila Trut
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I have just finished reading *How to Tame a Fox* and feel an irresistible urge to write about it and canvass for it. But there is a problem. The book reads like a thriller, and it is hard to say anything without giving away spoilers. Since I don't have the persuasive powers of a religious preacher and don't expect my readers to follow my advice blindly, I will try my best to describe the book in a manner that will provoke rather than satisfy your curiosity. The book tells the saga of an audacious scientific experiment that has been running continuously for over sixty years. The aim of the experiment was to see if we can domesticate foxes by selective breeding and produce a 'dog'. The main protagonist of the tale is the late Russian scientist Dmitri Belyaev who found the domestication of dogs a great puzzle. He wondered how humans had managed to artificially breed wild wolves who are rather aggressive and either attack or run away from humans. Moreover, domestic dogs have a number of characteristics distinct from their wolf ancestors, such as patches of colouring on their fur, floppy ears, curly tails and babyish faces - characteristics that are also seen in other domesticated mammals. It did not seem reasonable to Belyaev to assume that humans had deliberately selected for each of the many unique traits of domesticated dogs. Instead, he surmised that humans might have selected for just one trait namely tameness and that selection for tameness had resulted in the appearance of all the remaining traits, by somehow destabilizing the well-



balanced genetic instructions for making a wolf. To test this bold idea, Belyaev began an experiment in Russia, to selectively breed wild silver foxes

(*Vulpes vulpes*) selecting in each generation, the tamest individuals to sire the next generation of experimental foxes. Belyaev hoped that this should eventually produce not only tame foxes but also foxes that mimicked the signature characteristics of domestic dogs – spots on their fur, floppy ears, curly tails, baby faces and all.

That Belyaev succeeding in setting up this remarkable experiment, which not only ran continuously and successfully for the remaining 32 years of his life, but is still ongoing today, is of course because he was a remarkable scientist and a very unusual human being. But that is not all. Perhaps equally important was his foresight in recruiting the young Lyudmila Trut, only an undergraduate student at the time of her appearance on the scene. Lyudmila has bred tamer and tamer foxes with super-human tenacity and passion since the day she was recruited in 1958 until this day and has conducted almost every imaginable kind of modern scientific analysis of the products of her breeding programme. Over the six decades, the research team has provided impressive evidence vindicating Belyaev's bold theory and laying the foundations of our modern understanding of the evolution, genetics, physiology, psychology and genomics of domestication.

How to Tame a Fox is nearly as remarkable as the experiment itself. Author Lee Alan Dugatkin is an evolutionary biologist at the University of Louisville, in the USA. He is well known for his work on social and sexual behaviour, mating, fighting, copying and cheating as well as cooperating, in a variety of animals but mostly in fishes. Dugatkin is quite unusual among biologists today in that he wears multiple hats – he is as well known for his fascinating work on fish behaviour, as he is for his ground-breaking work on history of science (*The Prince of Evolution: Peter Kropotkin's Adventures in Science and Politics*; *The Altruism Equation: Seven Scientists Search For the Origins of Goodness*), for his text books (*Principles of Animal Behavior*; *Evolution*) and for his charming popular science books (*Cheating Monkeys and Citizen Bees*; *The Imitation Factor*). About *How to Tame a Fox*, Dugatkin said to me in an email “In this book, Lyudmila, who has been at the helm of the silver fox domestication experiment since it began in 1959 (Lyudmila recently turned 83), and I tell the story from the inside: the science, adventure,

politics, and heart-warming fox-human bond behind it all. Working with Lyudmila on this project, having the chance to go to Siberia on numerous occasions to spend time with her, time with the team working on this experiment, and time with those gentle, lovable domesticated foxes, is something that will remain with me for as long as I live”. Lyudmila Trut is both co-author as well as a major protagonist in the book (along with Dmitri Belyaev). Much of the narration is about Lyudmila but is told in the third person, and it works surprisingly well.

I have always felt that scientists err in speaking only about the products of our research and fail to communicate and discuss the process by which we create those products. We quite deliberately burry under the carpet the sources of our hypotheses, the reasons for our choice of problems to investigate, the circumstances and constraints under which we conduct our work and the biases that inevitably creep into our interpretations. Sadly, the scientific literature is sanitized to remove all traces of the human, social and political milieu in which we practice our craft. This creates an opaque wall between science and society, leading to avoidable misunderstanding and mistrust. *How to Tame a Fox* is the perfect antidote to this lament. It lays bare all the social and societal influences that relentlessly work during the course of scientific research. And yet, contrary to what many scientists fear, there is not a blemish on the rigour and precision with which the science is described.

As I said up front, I don't wish to give away any spoilers. Read the book to discover how tame the foxes actually became and how quickly, and what kind of scientific evidence was brought to bear on the claim of upholding Belyaev's theory. Read the book to see how an emboldened Dmitri Belyaev went on to propose that we humans too are domesticated primates selected over generations for tameness. Read the book to see how politics repeatedly decided the course of the science, how Trofim Lysenko, Joseph Stalin, Nikita Khrushchev, Richard Nixon and Mikhail Gorbachev all played a role in nudging the turn of events. Read the book to know how greed, theft, tragedy and murder played important roles in the turn of events. Read to know the roles of poverty, democracy, charity and international camaraderie in making and breaking the science. And last but not the least, meet a large cast of characters with the most

adorable Russian names – meet not just Dmitri and Lyudmila, but meet also Fea, Julsbar, Kainskaya, Kisa, Kohila, Kukla, Laska, Lesnoi, Marina, Mehta, Natasha, Nina, Palma, Pamir, Pashka, Penka, Pesna, Piva, Plaska, Prokhor, Proshka, Purga, Pushinka, Pusya, Svetlana, Tamara, Volodya, Zaimka, and many more, and discover who's a fox and who's not.

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