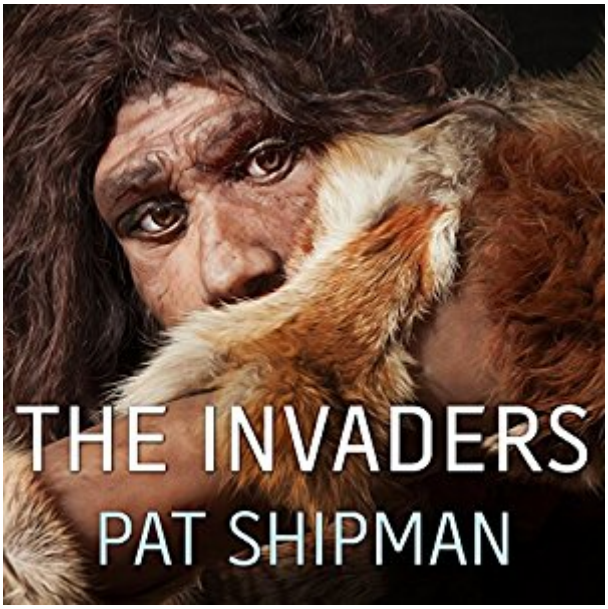
The Invaders: How Humans And Their Dogs Drove Neanderthals To Extinction



Synopsis

Approximately 200,000 years ago, as modern humans began to radiate out from their evolutionary birthplace in Africa, Neanderthals were already thriving in Europe - descendants of a much earlier migration of the African genus Homo. But when modern humans eventually made their way to Europe 45,000 years ago, Neanderthals suddenly vanished. Ever since the first Neanderthal bones were identified in 1856, scientists have been vexed by the question: Why did modern humans survive while their evolutionary cousins went extinct? The Invaders musters compelling evidence to show that the major factor in the Neanderthals' demise was direct competition with newly arriving humans. Drawing on insights from the field of invasion biology, Pat Shipman traces the devastating impact of a growing human population: reduction of Neanderthals' geographic range, isolation into small groups, and loss of genetic diversity. But modern humans were not the only invaders who competed with Neanderthals for big game. Shipman reveals fascinating confirmation of humans' partnership with the first domesticated wolf-dogs soon after Neanderthals first began to disappear. This alliance between two predator species, she hypothesizes, made possible an unprecedented degree of success in hunting large Ice Age mammals - a distinct and ultimately decisive advantage for humans over Neanderthals at a time when climate change made both groups vulnerable.

Book Information

Audible Audio Edition
Listening Length: 7 hoursÂ andÂ 20 minutes
Program Type: Audiobook
Version: Unabridged
Publisher: Tantor Audio
Audible.com Release Date: May 19, 2015
Whispersync for Voice: Ready
Language: English
ASIN: B00XQBAJRO
Best Sellers Rank: #118 inÂ Books > Audible Audiobooks > Nonfiction > Lifestyle & Home > Animal Care & Pets #202 inÂ Books > Science & Math > Biological Sciences > Paleontology #278 inÂ Books > Politics & Social Sciences > Anthropology > Physical

Customer Reviews

"The Invaders: How Humans and Their Dogs Drove Neanderthals to Extinction" by anthropologist Pat Shipman is an enjoyable book. It is well-written and surprisingly entertaining. If I was rating by

enjoyment alone I'd probably give it 4 stars.So why am I only giving it 2 stars? Because it's the work of a scholar, published by an academic publisher, defending a controversial hypothesis, and on that front it fails completely. It does not convincingly back up the assertion presented in the title.Shipman begins the book by referring to a paper by Germonpre et al. (2009) that claimed to have identified a new method of distinguishing dogs from wolves through cranial remains alone. The oldest specimen identified as a dog in the study was a 32,000 year old "proto-dog" from Goyet, Belgium. Shipman says that this paper was important in formulating her hypothesis that dogs played a role in the extinction of Neanderthals, as it pushed back the date for dog domestication by "about 18,000 years".Recently, Drake et al. (2015) reexamined the Goyet cranium using 3D morphometric analysis and instead argue that it is a wolf, and not a dog at all.This is a particularly fitting beginning for this book, and acts as a microcosm of the work as whole. Shipman extrapolates wildly from limited and controversial data to make her case. Shipman further relies heavily on the Goyet "dog" in her Chapter 12 discussion of the origins of dog domestication.Other than the controversial work of Germonpre et al., there is almost nothing to support the origins of dog domestication occurring so deep in the past. Indeed, recent genetic research seems to indicate that all modern dogs descend from a population that lived about 11-16,000 years ago (Freedman et al. 2014). Certainly, there could have been earlier domestication events that did not end up contributing genes to modern dogs, however there is as of yet no evidence to support that, in my view.In fact, some of the research cited by Shipman seems to heavily undercut her own arguments. She mentions an isotopic study on Gravettian (22-32,000 years ago) people and "dogs" to determine their diet. The study found that the Gravettian people ate large quantities of mammoth, while the "dogs" relied heavily on reindeer. Shipman stunningly speculates that the Gravettians may have hunted mammoth for themselves, and then on top of that went out of their way to hunt reindeer specifically for the dogs. This line of thought is simply absurd in my view.Hunting is incredibly time consuming and difficult. The idea that these people would have created double the amount of work for themselves to feed their dogs, hunting an entirely different animal rather than giving them the leftover remains and scraps of what they already ate, is shockingly silly and has absolutely no precedent historically as far as I'm aware. A far more parsimonious explanation is that these "dogs" were actually wolves that hunted and scavenged reindeer and had no connection to the Gravettian people that primarily hunted mammoths.With that said, the book does contain some good discussions on invasion biology and Neanderthal populations. Shipman correctly notes that Neanderthals had very small population sizes, making them especially vulnerable to changes in the environment.Neanderthal populations were likely barely above the minimum viable population

(MVP) required to survive as a species. Top level carnivores intentionally keep their populations low (often through infanticide and intra-group competition) so as to avoid over-hunting. Neanderthals had small populations and likely extensive inbreeding which may have often reduced fitness through deleterious mutations. Racimo et al. (2014) sequenced the genome of a Neanderthal female and found that "her parents were related at the level of half-siblings and that mating among close relatives was common among her recent ancestors."Shipman does a good job of covering much of Clive Finlayson's work on the changes in the environment during Neanderthal extinction. Neanderthals "were ambush predators that used the cover of brush and tall grasses as they stalked their prey", while later Upper Paleolithic humans "favored the vast open plains of the steppeland and tundra" due to their projectile weapons. As the climate cooled the woodland habitat that the Neanderthals relied on to ambush prey began to recede and the plains opened up.While competition from migrating modern humans may have contributed to the Neanderthals demise, climate change and demographic factors also likely contributed. In fact, climate change or demographic factors on their own could explain their extinction without necessarily requiring the contribution of modern humans.While humans may have played a role in Neanderthal extinction, there is no evidence whatsoever to support the idea that dogs contributed. Even if one accepts that the Goyet cranium is from a "dog", and that the Gravettian canids are "dogs" (both proposals highly unlikely), that still points to the earliest domestication being about 10,000 years after Neanderthals already went extinct (A study by Higham et al. (2014) indicates that Neanderthals disappeared about 40-42,000 years ago).For a superior (albeit quite academic) look at Neanderthals and their demise, I'd highly recommend Steve Churchill's "Thin On The Ground".At any rate, the book was enjoyable, easily readable, and had some interesting information within. The hypothesis is, however, very poorly supported. As a work of credible scholarship it is substandard.2 stars.

. The theme of this book is that modern humans were an invasive species when they entered Europe, profoundly disrupting the ecosystem and forcing the extinction (cave bears and lions) or radical behavioral changes (brown bears) of other top tier carnivores. Neanderthals presented as a specialized human form with a static culture based on close encounters with big game. Their populations were stable with some fluctuation and climate deterioration may have affected them at times. But I think MIS 3 climate instability is over-blown here and Neanderthals had been around for more than one 100k cycle. Modern humans may have actually been more cold-hardy by virtue of better clothing and more adaptable life style. Better dates for some sites suggesting that there was relatively little overlap and that Neanderthals may have disappeared after 40 kya rather than

existing beyond 30 kya. An illustration of the effect of an invading carnivore is given by the return of wolves to Yellowstone and their effect on limiting browse damage by a burgeoning elk population, along with a sharp decrease in coyotes and regrowth of aspen and willows. The invasive nature of humans demonstrated by their rapid population expansion to densities never achieved by their predecessors, and by the advent of Ã¢Â Âœsuper sitesÃ¢Â Â• with remains of hundreds of mammoth individuals. This is taken as evidence of a great revolution in hunting methods, along with the ability to defend kill sites as they consume entire mammoths. Dogs are proposed as the major difference in both defending kills and in driving game to kill sites. Some genetic work and a few early Belgian dog fossils used to date domestication before 20 kya. No actual proof there were dogs earlier than that. Incidentally, dog genes show that humans entering America from Siberia brought old world dogs with them. A digression about how human and wolf eyes are designed to show the direction of their gaze, making training and interacting especially effective. A nice little story here, but even the author admits that a lot of this cannot be substantiated without additional information.

Concise academic work. Not for the popular reader. The book provides more for the reader than the simple idea that proto dog/Wolf dog/ Canid descendant symbiotically paired with our ancestors to eliminate our competition, the Neanderthals. The author provides detailed support for her hypothesis which can be found in the final chapters. Book spans anthropology, palaeontology, archaeology, biology and many of their derivative sub disciplines. A significant amount of time is dedicated to invasive species biology and its purpose, value and contribution in light of recent findings that both support her hypothesis and science generally.

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