



The End of Animal Farming: How Scientists, Entrepreneurs, and Activists Are Building an Animal-Free Food System

Jacy Reese

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A bold yet realistic vision of how technology and social change are creating a food system in which we no longer use animals to produce meat, dairy, or eggs.

Michael Pollan's *The Omnivore's Dilemma* and Jonathan Safran Foer's *Eating Animals* brought widespread attention to the disturbing realities of factory farming. *The End of Animal Farming* pushes this conversation forward by outlining a strategic roadmap to a humane, ethical, and efficient food system in which slaughterhouses are obsolete—where the tastes of even the most die-hard meat eater are satisfied by innovative food technologies like cultured meats and plant-based protein. Social scientist and animal advocate Jacy Reese analyzes the social forces leading us toward the downfall of animal agriculture, the technology making this change possible for the meat-hungry public, and the activism driving consumer demand for plant-based and cultured foods.

Reese contextualizes the issue of factory farming—the inhumane system of industrial farming that 95 percent of farmed animals endure—as part of humanity's expanding moral circle. Humanity increasingly treats nonhuman animals, from household pets to orca whales, with respect and kindness, and Reese argues that farmed animals are the next step. Reese applies an analytical lens of "effective altruism," the burgeoning philosophy of using evidence-based research to maximize one's positive impact in the world, in order to better understand which strategies can help expand the moral circle now and in the future.

The End of Animal Farming is not a scolding treatise or a prescription for an ascetic diet. Reese invites readers—vegan and non-vegan—to consider one of the most important and transformational social movements of the coming decades.

The End of Animal Farming: How Scientists, Entrepreneurs, and Activists Are Building an Animal-Free Food System Details

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From Reader Review The End of Animal Farming: How Scientists, Entrepreneurs, and Activists Are Building an Animal-Free Food System for online ebook

Rosie Campbell says

This book was fascinating from both an animal advocacy perspective and a food technology perspective. Rigorous and evidence-based, yet entertaining and easy to read. I particularly appreciated the thoughtful analysis of effective and ineffective advocacy strategies. Paints a compelling picture of a future food system without animal cruelty, and I'd recommend it to anyone interested in this possibility.

Henry Cooksley says

61 key insights and thoughts after reading Jacy Reese's new book, The End of Animal Farming

(Disclaimer - while I am part of the effective altruism community, I have no special incentive to give this a high rating just because I have interacted with the author before. My words are mine alone, although I thank Jenny Burrowes for her comments and suggestions.)

1. The scale of animal suffering is in the hundreds of billions killed *every year*. Most of that is unnecessary, which further adds to the tragedy. However, horror on this sort of scale just doesn't motivate some people. For them, we need to talk about other things - or the message simply won't stick.
2. Vegetarianism being thought of as bland dates back to the 1800s, where it was suggested as a way to reduce immoral or sexual behaviours. (Other things suggested: enemas, vibration therapy.)
3. Plant-based diets are taken more seriously today because they are adopted for the sake of concrete ends, such as the animals themselves, the environment, and the wellbeing of other humans - not just some abstract notion of purity.
4. Inefficiency. Ten calories of plant food on average goes to make one calorie of animal food. Ten grams of plant protein becomes two grams of animal protein. From an efficiency standpoint, nothing about our current food industry makes sense. We don't want the world to be inefficient, do we?
5. If we can grow meat from a cell that's biologically similar at half the cost, why would we need to go to all the trouble of animal farming in the first place? Efficiency is the bottom line, the 'ace in the hole' as Reese puts it.
6. Reese describes his childhood growing up around farmland in rural Texas. His decision to go vegetarian was a small change that had a great positive impact. This relates to effective altruism more generally. It was not preordained somehow that he would become involved in animal advocacy. It followed from the idea of how to do the most good.
7. People often say pets help young children appreciate 'life and death'. Are they implicitly saying that there is some similarity between the death of a loved animal and the death of a loved human? Where does that

similarity end?

8. The principle of parsimony says that we should prefer the simplest explanation first, because that's the best strategy to take when forming and updating our beliefs. We observe pet dogs appearing to enjoy pleasure; elephants and rats appear to show altruistic behaviours; pigs appear to demonstrate object perception and long-term memory, as well as coming when called by name after training; elephants even appear to show grief. Might the simplest explanation be that animals do indeed have some kind of sentience? What is the simplest theory that fits the observations?

9. Recognising animal sentience is relatively recent. Only in the 2010s was there scientific agreement on animal experiences of pain; in 2013 an article titled 'Dogs Are People, Too' appeared in the New York Times, confirming what many dog owners presumably had known privately for some time.

10. We may have progressed past the 'desperate need for human superiority'. After the film 'Blackfish' was released, highlighting the suffering of their orca whales, SeaWorld's revenues collapsed within a year.

11. Contradictions. We experiment with rats to learn about human emotional response, while justifying it by pretending they have no emotional response. Similarly for testing painkillers. We suppose dogs have no sophisticated awareness of the world, while relying on them for help when we lose our ability to see. Are rat brains so different from chicken brains? Are dog brains so different from pig brains?

12. Lobbying in the animal food industry is not fundamentally different from that for guns, or for tobacco. Post-war demand slumped, and profits were threatened. Memorable marketing campaigns ensued. Got slogans?

13. Sometimes the only way to be taken seriously is to slowly collect a long record of evidence. Then people are more willing to listen.

14. Virtual reality headsets are a thing now, and they can be used to help the cause of advocacy. [Sometimes I see certain orgs use a 'good cop, bad cop' approach to their advantage. Mercy For Animals (<https://mercyforanimals.org/>) would be in this category, with their viral video content switching between cute, relatable animal videos and horrific videos of farmed animal suffering.]

15. A recent study indicates that 47% of Americans support banning of slaughterhouses in principle. Although promising, the framing of the question matters a lot, so we should treat this insight with caution.

16. Veganism does not equal animal advocacy. This is perhaps one of the most important lessons to be learned from the past few decades.

17. Many executives are in fact concerned about factory farming and animal cruelty more generally, but see it as a 'necessary evil'. One task for animal advocates therefore is to try and change that 'necessary' to an 'unnecessary' in people's minds.

18. Appealing to economic efficiency is a short circuit to the same end goal. Getting executives to care about their bottom line is easier than getting those same executives to spend money on ethical initiatives.

19. There have been over 1000 years of interest in 'mock meats', specifically in East Asia.

20. Products like the Impossible Burger (<https://impossiblefoods.com/>) are so close to the taste of an average

beef burger that the difference is probably within the general variance of cheap and expensive beef burger products on the market today. This matters.

21. There are cultural differences in some parts of the world between ‘plant hunger’ and ‘meat hunger’. At least one language even has a different word for each of the two concepts.

22. Look up ‘heme’ (or ‘haem’). It’s the Fe-containing, ‘bloody’, compound thing that makes beef taste beefy. So much so that in some tests, when it was added to chicken, people mistook it for beef. It’s also the key ingredient in the Impossible Burger.

23. Some people really love the taste of saturated fat. As (some) plant-based meats get very close to resembling traditional meats, they might need the same health warnings too. The upside: consumers will be able to make the choice for themselves without missing out too much, as there will be a wide range of plant-based meats to choose from, not all of them unhealthy or even bloody.

24. Suffering per calorie. Unfortunately, the smaller the animal, the more suffering there is per animal for the same amount of calories. [This is true even with a moderate weighting for levels of sentience.] For 500 calories’ worth of food, suffering can range from many days (fish) to a few days (chicken, eggs) to many hours (pork, beef).

25. This leads to a suggested priority: we should find substitutes for chicken meat, eggs, fish, and other products with these ingredients (such as mayo).

26. Perhaps the dairy industry feels threatened by the sales of plant-based milks growing to be as large as 10% of their own sales volumes. Their response? Make ‘milk’ a protected term, only referring to the ‘secretions’ of a cow. I guess they have never heard of goat milk, or soy milk? Reese suggests ‘goat juice’ as an alternative, a phrase that is sure to haunt me for the next few days.

27. If ‘butter’ becomes a protected term, because non-dairy butter confuses consumers, then I guess I need to stop referring to ‘peanut butter’ and ‘cocoa butter’. Peanut paste anyone?

28. If something you consumed was harmful for you, like a cigarette, would you want it to be labelled on store shelves? What about to ‘protect the children’? Now what if that product was a high-cholesterol animal product? Does it get an exception? Why?

29. Although ‘fake meat’ is a memorable shortcut to mean plant-based meat [I definitely use it casually in conversation from time to time], overuse of the term ‘fake meat’ could establish that plant-based products should always be viewed as inferior, or second-best.

30. Calling something like the Beyond Burger (<http://beyondmeat.com/>) simply ‘meat’ without qualification suggests to consumers that they can get the same flavour profile, mouth feel, and satisfaction from a plant-based product as from an animal-based product. This is ultimately more helpful for activism than the alternative. This is also why names matter.

31. ‘Clean meat’ and ‘cultured meat’ are the terms we’re left with for this concept, and both terms have their upsides and downsides. It really depends on what audience you’re dealing with.

32. Learn the Four Ns. Normal. Necessary. Nice. Natural. When surveyed, people tend to associate animal foods with these categories about 80-90% of the time.

33. People are pretty easily influenced by what others think - researchers have got people to completely change their opinion of songs just by manipulating what they told them about how many previous downloads that song had prior to them seeing it. Knowing what other people think about a practice, such as our habits when it comes to the food on our table, matters for animal advocacy.

34. Celebrity endorsement works. If Ariana Grande* can do it, then it must be something normal! (*Insert your favourite celebrity here.)

35. It's hard to claim that animal foods are necessary for good health when so many professional vegan athletes exist (there are even vegan Olympians). As long as people continue to provide examples, the 'necessary' claim becomes steadily weaker over time.

36. There is more variety in (vegan) food available now than ever before in human history. Nowadays, vegan food is genuinely nice. The Victorian, puritan conception of these diets has been replaced by global food trends, viral recipe videos, and vegan 'junk' food. There really is a vegan dish for everyone.

37. There are plenty of examples of things which are 'natural' or have a long history, which are horrific and have no place in modern society. I'll leave you to come up with examples of your own.

38. Chickens are 4x larger than they were in the 1960s. Fifteen-year life spans have been reduced to 42 days. 'Natural' can really mean anything critics want it to mean.

39. On the other hand, naturalness is often meant as a precautionary principle. If some food item has a long history of not being toxic for people, then it probably isn't toxic for people now. However, our modern animal food processes are anything but natural, which is why people worry so much about cross-contamination and food poisoning in animal products like chicken and beef.

40. When talking to people, work out whether they use 'natural' as a proxy concept for 'food safety'. If so, talk about the safety of plant-based foods.

41. The fifth justification for animal farming outside the four Ns is that some animal farming is 'humane', therefore animal farming generally can't be completely wrong. There are problems with this line of reasoning.

42. Reese mentions three reasons why the 'end animal farming' message should not be replaced by the 'end factory farming' message. First, exploitation might be wrong *independently* of whether suffering occurs. Second, animals raised on so called high-welfare farms still suffer in important ways. This is bad enough even without mentioning the additional environmental harms of these farms over plant-based agriculture. Third, psychological refuge. People often use high-welfare farms to derail the conversation, to get in the 'thin end of the wedge'. From this point, they can claim that they (of course) only consume high-welfare animal products (which is mostly impossible), and therefore that there is really nothing to worry about.

43. A 2017 survey found that 75% of US adults claim that they usually consume 'humane animal products', whereas the proportion of non-factory farms in the US is about 1%. This suggests that consumers are uninformed.

44. A thought experiment might help us make sense of these concepts. We imagine that humans, in some alternate history, became the 'happy' slaves of some different, more advanced species. They raise us and kill us painlessly once we have stopped growing, in order to eat us. Let's say that we are killed at age 16. Is this

bad? We might appeal to our sense of not having had a fair shot at life (a ‘fair innings’) or the chance to experience life to the full. We haven’t been made to suffer, but we also have lost out on many years of potential joy. This loss of potential joy might be relevant to the cause. [For a longer illustration of this kind of situation, albeit in a very different context, I’d recommend looking at the sci-fi novel/film by Kazuo Ishiguro ‘Never Let Me Go’.]

45. Scaling up truly humane farming operations to the current level of global demand is practically impossible. To feed everyone over the long term, we need an alternative to animal farming. What’s the best way to bring that world about? At least in part, it means campaigning for the end of animal farming.

46. As Reese puts it: “So even if humane animal farming is possible in theory, it seems exceedingly difficult to achieve at a financially accessible global scale.”

47. If you are a small or large farm operation, you are still constrained by economics. With margins already thin in the industry, there is no incentive to go beyond the minimum level of welfare protections if no one else is doing so. Even the fancier ‘upmarket’ brands still have to run a business and still have to keep costs low in order to be profitable.

48. [A moral uncertainty argument: let’s say that you are unsure whether or not ‘harm-free’ exploitation is bad. Due to the scale of the problem, with 100s of billions of animals killed every year, if we’re wrong about this, it ends up being really bad - just because of how many animals there are. Is it really worth the risk if we turn out to be wrong?]

49. The most important insight from advocacy research: the higher priority of *institutional* change over *individual* change.

50. Can institutional messaging be seen as too aggressive, or even totalitarian? Perhaps. This is important to bear in mind. Stories, then statistics.

51. Try to work with all communities before dismissing or thinking of criticising their contributions. For example: black veganism is a thing, in part because black communities have long highlighted the historical factors leading to differing preferences for animal foods. Unfortunately, not every vegan feels at home in the vegan movement as it currently exists.

52. There is such a thing as liberal messaging and conservative messaging. Conservatives often (but not always) value things like loyalty, authority, and sanctity, more than liberals do. Highlighting the concept of oppression might not be as useful as showing how avoiding animal suffering helps to ‘preserve American values’.

53. Consider these two statements: ‘America is a nation of animal lovers.’ ‘America is a leader in technology and innovation.’ If you found those relatable, then you might agree in principle with promoting new plant-based food alternatives without necessarily realising it.

54. Intersectionality is a real thing: build bridges with other movements.

55. Maintain a global scope. Lewis Bolland of Open Philanthropy Project reminds us that about 49% of farmed animals currently live in China. With rising prosperity often comes increased demand for animal products, perhaps as a sign of wealth.

56. The Big Four regions to focus on: China, US, EU, India. China and India for sheer size, the US and EU for influence.

57. Be careful not to perpetuate racial stereotypes. If a tiny fraction of the Chinese population have regularly consumed dog meat, associating it with the whole nation is just offensive.

58. There will always be a case for moral circle expansion, as there has been throughout history. It is naive to think that we are at some final end-stage of moral development. Effective altruism thrives when we are constantly keeping open minds. What about the far future? What about wild animal suffering? What about artificial beings?

59. Keeping animal advocacy related to the moral circle means being less open to criticisms relating to changing evidence on health risks or environmental risks, where new (often contradictory) evidence seems to be arising all the time. The immorality of animal suffering is not vulnerable in the same way - it will matter for anyone that takes the time to understand what suffering really means.

60. A roadmap to a plant-based future, after the end of animal farming. Replacement of animal products in supply chains, schools, and catering companies, for reasons of cost efficiency and sustainability. For example, switching cheap chicken nuggets in schools with healthier (perhaps even tastier) alternatives. Consumer tastes will take longer to shift. For top-end, luxury markets, wealthier consumers will have more scope to care about their health, ethical sourcing, and cutting-edge ingredients. They might also respond better to celebrity, high-status endorsements.

61. Be uncertain in your future predictions. Remember that above all, great value comes from being part of a great community!

I really enjoyed reading this, and I hope you've learned something from it too. But don't take my word for it - you can buy the book for yourself as it's coming out at the end of 2018 (see <http://jacyreese.com/> for more details). I hope when you read it that you have the same enjoyable, memorable experience that I did.

(Guide to my rating system)

5? - A classic. Influential on a 50-year scale and/or something which I have very strong personal feelings for.

4? - A great book. Influential on a 10-year scale and/or something which I really enjoyed reading.

3? - A good book. Influential on a 1-year scale and/or something which I liked reading.

2? - A not-so-good book. Possibly not worth the time to read and/or something which I disliked reading.

1? - A near-useless book. Probably not worth the time to read and/or something which I really disliked reading.

Angelina Li says

Fantastic book for anyone who wants a clear, level-headed introduction into the world of animal advocacy!

Mimi Tran says

The End of Animal Farming is a great read. I enjoyed reading it and highly recommend it to anyone who is intellectual curious, regardless of your level of interest in animal welfare or the world's modern food system.

Having read /books and watched documentaries on the scale of animal suffering resulted from factory farming, I appreciated that the author stated right in the beginning of the book: "This is a book about exactly how we can solve those problems". And author Reese delivered what he promised throughout the entire book. The book began with a logical, compelling argument baked by well-research cases, ranging from history, philosophy to science to argue for the end of animal farming and a new age of alternative non-animal food source. In the next couple chapters, I can't help but feeling optimistic while reading about the exciting things that are happening in the field of vegan-tech and cellular agriculture. I recall at one point in the book, the author stated that "...by working on technology, we usually are just affecting the speed of progress, but by working on social change, we can affect the direction of progress. Affecting the direction ensures that, in the long run, the welfare of humans and animals is as good as it can be." With that intention, the last couple chapters changed direction and focused on evidence-based social science and its application to policy and animal advocacy for effective and long lasting social changes. A another big part of why I enjoyed this book so much was how compassionate and humble the author was; and it really showed up in the language and writing throughout the book.

After reading The End of Animal Farming, I felt much more hopeful about the future of our food system and optimistic that we could end animal farming for good. At the same time, I gained valuable knowledge that I can use to communicate with friends and family about this important issue.

Jonathon Tree says

I can't recommend this book enough for anyone who views themselves as open-minded, or anyone interested in our modern food system, environment and social justice, or new technologies.

Throughout the book, the author presents a logical and well-structured case for replacing conventional animal farming with non-animal alternatives. It is a compelling and thoughtful look into a rapidly changing and often overlooked area of society, diving headfirst into a new world of animal ethics, food technology, and our own human psychology.

Unlike many reads, this is one that is sure to challenge and enlighten, and will likely be looked back on as one of the earliest histories of this nascent movement—should the events predicted by the author come to fruition.

Josh says

It's a fascinating read on how everyday people are trying to change the world using innovation to make a difference. It's a new frontier of activism and it's hard to stop reading once you start. It brings hope for a better future!

Ricardo Lopes says

As a YouTuber and promoter of science, and having been a vegan for more than 4 years, I have very much appreciated Jacy's book.

He shows that he took the painful job of going through the relevant scientific literature in order to deliver a book to the public which, I think, has been longed for.

I have been part of vegan groups, many of which I eventually had to distance myself from because, unfortunately, members very rapidly start associating with pseudoscientific movements, and supporting environmental approaches that lack any kind of rigorous evidence to back them up.

Jacy didn't do any of that in this magnificent book. He decided not to demonize people who consume animal products, and learned and exposed some of the most relevant aspects of their individual and social psychology. Instead of blaming people, and taking the easy moralistic route of condemnation and simply saying that it's easy to transition to a plant-based diet, he proposed evidence-based solutions to counter the calamity that is animal farming.

This book is definitely a must-read!

Ben Davidow says

I've been closely tracking the Clean Meat Revolution, Effective Altruism, and factory farming for years but still learned a ton from this book. Reese is a rigorous thinker and has packed these pages with powerful ideas. This book is a great read for anyone but especially (aspiring) entrepreneurs, scientists, activists and Effective Altruists. The next decade will be monumental in bringing down factory farming and those on the right side of history will prosper while freeing the world from a great deal of suffering.

Amy Bruestle says

First off, I'd like to say that I won this book through a Goodreads Giveaway contest! I am really glad that I was one of the lucky winners too, because honestly, although I would've definitely read this book if it was free, I know I wouldn't spend 30\$ to read it...especially when I could get the same information online.

HOWEVER....I did win it, which is AWESOME, because Jacy Reese put all the information together in such a neat and organized way, which you wouldn't have, had you found it online yourself. I was hesitant to enter this giveaway because I wasn't sure how much I would enjoy this, or whether or not I would even be able to read the book to the end. But that was no problem at all. Not only did I read the book to the end, but I enjoyed it thoroughly too!

The information provided is insane! I LOVE learning new things, especially from reading, and this book taught me SOOOO MUCH! It really makes you think and contemplate new ways of doing things that have previously been done for tons of years the same way. But most of all, it has made me more conscious about the world around me, even just little things too. As far as I'm concerned, any book that has an impact on me that isn't solely emotional - but also impacts my day to day life in a positive way, is a book worth reading!

I definitely recommend this book to anyone who has any interest in animal farming, new innovations, food

and science, animal free products and food, and just the ways in which the world is changing! You will not be disappointed by any means!! READ THIS BOOK!

KC says

This is a quick read with the main focus on the perpetual push toward ending the practice of animal factoring farming. Although the author touches on many important points, I felt this book fell a bit short for me. I have always been an advocate for the protection of animals and have been continually bettering my diet over my lifetime but this book lacked any real insight regarding the government's role with the nature of the manipulation of our food, our health risks, big pharma and to the saving our planet. Jonathan Safran Foer's book *Eating Animals* was personally a better pick for me.

Kirby says

This book was great and so helpful. I've been vegetarian since 2010, and I've gone through periods of feeling frustrated and hopeless about how to make real progress in the field of animal welfare. I'm burned out on reading about the problems with our food system and eating meat, and it's not as easy to find high-quality content on what can be done *realistically* to address these systemic issues. Even if you eat meat, I think we can all agree that factory farming is truly horrific psycho shit, but it's such a firmly entrenched part of our broken food system that many of us feel powerless in the face of it. This book presents a plan for ending not just factory farming but all animal farming in a clear, pragmatic, strategic manner that focuses on institutional change with long-term effectiveness. This is the sort of practical approach that I have felt myself leaning towards more and more the older I get, not only with regards to animal welfare, but many other political and social causes. Thoughtful planning and effective altruism, not scare tactics and attention-grabbing strategies, can often make a much greater impact and lead to lasting change. The author almost sort of lost me towards the end of the book when he started talking about digital sentience (i.e. robots with feelings) and space exploration, as it seemed sort of thematically and tonally dissonant from the rest of the book, but overall, I thought this was such a persuasive and well-written guide to how we can actually make positive changes in our food system, for the sake of animals, the environment, our health, and our collective morality. Highly recommended to everyone (excellent choice for audio if you're into that).

Kathryn says

I have read books and watched documentaries on eating to the exclusion of animals, documented studies, etc. This book is one person's views. It wasn't for me, so I feel rating it would be a disservice to those interested in this topic. I do think that the current system will implode and already, most people are priced out of this "market" especially 4 legged creatures.

Lila Rieber says

This is not your average vegan book. Despite the moral urgency of the issue of animal farming, Reese is thoughtful and reflective, not preachy. A fascinating book on the history and science of the animal welfare movement, with clear ideas for advocates and ordinary people to help end animal exploitation.

Sara says

I want everyone to read this. It focuses on the technology that will end animal farming, rather than the terrible conditions of animal farming, and it's fascinating.

Alfredo Parra says

A must-read for anyone interested in the most recent developments and discussions on how we can bring about a world free of animal products. Sober and well-researched.
