

Opinion: Our ancestors were carnivorous super-predators, so do we really have a choice about eating meat?

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Peter Purves Smith Kangaroo Hunt. Credit: Wikimedia Commons

The internet abounds with 'expert advice' on what we should or shouldn't

eat. High carb or low carb diets? Grains or gluten free eating? Meat eating or veganism?

Most of it promotes our [food](#) choices as a simple binary decision - eat this don't eat that; this is good for you, that's bad.

Yet, the decisions we make about what to eat are a complicated affair. They're never a simple case of eat what's best for your health or what naturally suits our physiology.

Cultural mores, religious practices, ethical concerns, gender, stage of life and state of health, geographic location, economics and family and individual preferences all play a role in the selections we make.

One of the most confusing choices people face is whether to eat meat or not, and opinions are very strong on both sides of the debate. But is it natural to do so?

Our ancestors evolved to be super-predators with meat eating and sharing a key survival strategy for our kind for millions of years. So, do we really have a choice to eat meat today?

Things to eat and avoid

Culture is a ubiquitous force when it comes to making choices about food. All human societies, from hunter-gatherer to post-industrial ones like our own, have food preferences and fads, or restrictions and taboos.

We eat things because they taste good, even if they are bad for us. Other things we avoid have proven health benefits, but maybe they're simply not as tasty or palatable.

Sometimes food taboos exist for good reason - such as to prevent

overuse of an important resource or to [reduce the risk of food poisoning at an important stage of life](#).

But just as often we find dietary preferences are culturally patterned behaviours, such as [women changing their diet](#) at varying times in their menstrual cycle, despite the practice having negative health consequences.

On top of this, [certain nutrients like sugar](#) activate reward pathways in the brain similar to those associated with cocaine use, making them highly sought after, and potentially addictive.

Much of the dietary advice found on the internet might be well meaning, but a substantial amount of it is misleading and frequently smacks of [anti-intellectualism](#).

Bowls full of bullshit

More often than not though the ease with which we can post our opinions online has led to a glut of dietary advice that can only be described as 'bullshit'.

Bullshit is defined by [Princeton philosopher Harry Frankfurt](#) to mean something espoused by someone who pretends to know a lot about it but actually knows very little.

It's rife on the internet and fuels both anti-intellectualism and a deep mistrust of scientific authority.

The debate about meat, and whether we humans have evolved to eat it, has to be one of the best examples of bullshit seen on the web.

It has largely lost all sense of the complex reality of food choice

behaviours, and far too often tries to rewrite our evolutionary history by invoking pseudoscience.

Some [pro-vegetarian](#) or [vegan promoting](#) websites mistakenly claim that humans shouldn't eat meat because we evolved to be herbivores.

The substance of their arguments is often traceable back to the influential but [pseudoscientific views](#) of vegan physician Milton R. Mills.

Some vegan sites [even claim](#) support from anthropology for their anti-meat agenda.

We also find bogus arguments like these promoted in the [mainstream media](#) where some columnists push an anti-intellectual agenda by misrepresenting the views of scientists themselves such as fellow anthropologist [Richard Leakey](#).

For the record, here's what he has actually [written about meat eating](#) and human evolution.

But if you love a good steak, don't take the moral high ground just yet. There's plenty of bullshit in the pro-meat camp as well.

One need only read internet debates [on the subject of meat eating](#) to see barnyards full of it on both sides.

As an interesting aside, [social anthropologists have found](#) meat to be the one food that's subject to food taboos across a large number of cultures.

So, there might be a much deeper (genetic?) origin to our varying opinions towards meat, with some people loving it, and others repulsed by it, across the world.

Humans evolved as super-predators

No matter what the most militant of vegans or vegetarians would like to think, there's an abundance of scientific evidence that we humans evolved to be predator apes.

Our ancestors were highly skilled hunters and meat was widely eaten and highly prized.

While hunter-gatherers varied considerably in terms of how much meat they consumed, none of them was vegan, and such diets simply wouldn't have been available or viable options for them anyway.

Our human ecological and [life history](#) strategy evolved around acquiring and sharing hard to catch, but large pay-off, foods such as big mammals and fish.

We humans rely on culture for everything we do, whether it be the values and shared ideas we have about the world, social relationships, or the methods and tools we use to aid with the catching and processing food.

The earliest examples of stone tools used for acquiring and processing food have been [found in Africa](#) and date to around 3.3 million years old.

Butchered and defleshed bones [from around the same time](#) indicate clearly that early humans were butchering large bodied mammals for food.

Fire was probably used in an at least an *ad hoc* way from around 1.6 million years ago - probably much earlier - but became a regular tool for pre-modern humans from at least 400,000 years ago.

Cooking played a major role in making both meat and starchy foods palatable and digestible, providing our ancestors with a huge survival advantage.

Food cooking, especially of meat, may even have contributed to the [evolution of our large brains](#).

Endurance running, persistence hunting

Humans are the only living primate adapted for running - particularly endurance running, and during the hottest time of the day. This seems also to be a universal pattern among the species belonging to the human [genus *Homo*](#); all dozen or more of us.

The organs of balance - [our vestibular system](#) - are designed to help keep the head stable because of its tendency to pitch forward when running.

Humans possess a nuchal ligament to connect the base of the skull to the spinal column and help keep the head balanced as we run.

We [have long lower limbs](#) and a narrow trunk and pelvis. Our rib-cage is barrel shaped rather than shaped like a funnel with a bulging gut, like chimpanzees.

The muscles of our shoulder are decoupled from those of our neck because they aren't used for climbing, aiding the need to counterbalance the legs and reduce rotation of the head when running.

Many of our lower limb muscles and their tendons - like the [gluteus maximus](#), [iliotibial tract](#) and [Achilles tendon](#)- are also adapted for running.

We have large ankle bones, arches across two directions of the foot, and

the ligaments of the foot absorb energy when we run releasing it [during toe-off](#).

Our big toe has been brought into line with the other toes, losing its branch grasping abilities.

Humans have sparse and short body hair and between 5 and 12 million apocrine sweat glands that can produce [up to 12 litres of water](#) a day to help prevent hyperthermia.

The only other African mammals that are active during the heat of the day, running long distances, are dogs and hyenas.

Our species also has [uniformly pigmented skin](#) - the exception being people living at high latitude who probably [lost their skin colour very recently](#).

Pigmentation protects the outer layers of the skin against sun damage and ultimately skin cancer, so is vital for a mammal that has sparse body hair and is active in the heat of the day.

All of this points to hunting, and a particular style called the [persistence hunt](#). It would have been widespread prior to the invention of weapons like bows and arrows around 60,000 years ago.

David Attenborough's *Life of Mammals* series has some wonderfully engaging footage of San men [undertaking a persistence hunt](#). It's well worth a look.

A gutsy move

To claim we shouldn't eat meat because we aren't anatomically identical to carnivores demonstrates a profound misunderstanding of how

evolution has worked.

Humans and carnivores, like dogs and hyenas, are very different kinds of mammals, separated by around 100 million years of evolutionary history.

We are primates, and our basic body plan is constrained genetically by our primate heritage. You can't turn an ape into a wolf in just 3 million years!

While [much has been made](#) of our sacculated colon, this is a feature common to all apes, and is the result of common evolutionary inheritance.

We have all evolved from plant eating apes regardless of what we eat today. A sacculated colon in no way suggests we are herbivores.

Besides, humans do eat a lot more than just meat and clearly require a wide range of foods for a balanced diet. For example, no apes can synthesise vitamin C in their bodies so it must be acquired from plant food sources.

However, the human gut [differs substantially](#) from other apes in a couple of key respects: first, we have a small total gut for our body size, and second, our greatest gut volume lies in the small intestine, while in other apes it lies in the colon.

A bigger small intestine indicates we absorb most of our nutrients there, and that we obtain them from high quality, nutrient dense, sources like meat and starchy foods.

While a large colon, as seen in all other apes, fits with their strongly plant based diet (87-99% of foods) and the need to ferment it. Humans simply can't survive on the type of diet we see chimpanzees, gorillas,

orangutans or gibbons eating.

Another disturbing piece of evidence worth noting is tapeworms. Each year millions of people around the world are infected with them through eating under-cooked or raw meat.

And here's the rub: without infecting a human host, at least four species of tapeworm would be unable to reproduce. Humans are [a definitive host](#) for them.

The only other mammals to be definitive hosts for tapeworms are carnivores like lions and hyenas.

Molecular [clocks suggest](#) human tapeworms evolved about the time our ancestors began to hunt.

Briefly, two other human features need mentioning because they have been [widely used to mislead people](#) on the issue of meat eating.

Our teeth are very similar to those of other apes in terms of the size, shape and number we possess - all apes and Old World monkeys have 32.

But there's [one important difference](#): we humans have small canine teeth.

The canine teeth of apes are not used for catching prey or chewing food. Instead they are for display and are used by males to battle it out for dominance in a social hierarchy or for access to mates.

A small canine tooth evolved in human evolution sometime after 5 million years ago and represents a shift in the social structure and mating behaviour of our ancestors.

It shows us that male-to-male conflict had reduced. Perhaps because males were sharing food with females and each other. Males and females may even have been monogamous at this time.

Lastly, humans have nails instead of claws because we are primates. No primates have claws. So to [claim our lack of claws](#) again indicates a complete lack of familiarity with our biological affinities and evolution.

Besides, early [human](#) hunters used tools, their big brains and understanding of their environment and cooperative tendencies to catch food, not their brawn.

Making informed choices

There is a danger in taking our evolutionary history as fate. We are no longer hunter-gatherers and our lifestyle is about as far removed from that of our ancestors as can be imagined.

We need to adapt to our changing circumstances and find a diet that healthily supports it, like we have always done as a species.

Whether we choose to eat meat or not is not just a question of biology. It involves a complex set of cultural, social, ethical, health, personal and economic factors as well. It is not binary.

The best guide for most people on how to eat comes from science itself, for example, as presented in guidelines like those [from the Australian Government](#).

But many millions of people today survive on low or no [meat](#) diets, by choice, or otherwise. In this sense, vegetarianism or veganism is like any other culturally situated dietary choice.

It should be both understood and respected as such and can't be explained away or justified by appealing to a particular narrative of our evolutionary past.

In the end, my gripe is not with vegetarians or vegans or with those people who choose to eat animal food. My beef is with people who set out to promote their beliefs by appealing to anti-intellectualism.

Dishonest people who eschew the evidence and contestability of ideas that lie at the heart of science for personal, political or financial gain.

Those self-appointed experts who set out to deliberately deceive us by using pseudoscience or plain old bullshit to construct their own version of our past.

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