The Evolution of the Inadequate Modern Male

the evolution of the INADEQUATE MODERN MALE

BY PETER MCALLISTER

The superior strength, endurance and eyesight of ancient humans reveals that the weak have now inherited the Earth.

Very early in my career as an anthropologist I stumbled across a curious report about an mid-19th century Aboriginal man, a whaler called Thomas Chaseland, who was said to have extraordinary physical capabilities – particularly eyesight. Chaseland's shipmates claimed he could see land from 30 miles out to sea, spot whales surfacing outside of telescope range, and see a full mile underwater. A huge man of apparently prodigious strength, Chaseland also survived several shipwrecks at the hands of thrashing whales, on one occasion swimming 6 miles through freezing waters that killed his fellow whalemen.

But the attribute that stands out is his vision. Could it really be true, I wondered, that this Aboriginal man's eyesight was so much better than that of his European shipmates?

It was hard to believe, for several reasons. Chaseland's reported eyesight was, for a start, better than

most scientists thought theoretically possible. There was also the problem that the stories had something of the "noble savage" myth about them – the hardy native whose "wild essence" gives him superhuman powers.

A little research, however, showed that Chaseland's shipmates were probably right. Aboriginal men, even today, do have eyesight four times as good as men of European ancestry. A 1980s survey of Aboriginal eye health proved it.

This made me wonder how many other stories about the extraordinary abilities of pre-modern men were true? And what about males in our very distant, evolutionary past? I decided to find out, starting with that most male of characteristics – physical strength.

Surprisingly, some evidence can be gleaned about the physical strength of ancient men – from their bones. Anatomists have long known that bone grows in response to the muscular load placed upon it – the bigger the bone, the bigger the muscles.

This gives us a crude measure by which we can judge how strong pre-modern men may have been. Using it, for example, I was able to estimate from fossil arm bones that even an average Neanderthal woman would probably have been able to armwrestle a modern bodybuilder like Arnold Schwarzenegger to the table. Her male companion might well have been able to pick the Governator up and throw him.

The physical strength of even earlier humans, or hominins, can likewise be estimated from what we know of our closest primate relatives. Chimp muscle, for example, can exert approximately four times the force of modern human muscle. This seems to be because chimp muscle fibres fire in one explosive movement, as opposed to the more staggered manner in which ours fire.

Chimp muscle is actually among the strongest in the animal kingdom, probably because they need to throw their heavy bodies around acrobatically in the treetops. Since our earliest ancestors apparently shared this semi-aboreal lifestyle for our first two million years, it is highly likely they had such explosive muscle power too.

Other archaeological evidence, this time from fossilised footprints in the Willandra Lakes region of Australia dated to 20,000 years ago, shows that even ancient men of our own species were apparently capable of remarkable athletic feats. Those footprints, indelibly pressed into the soft mud of a shallow temporary lake by Aboriginal hunters, allowed archaeologist Stephen Webb to calculate that one of the men, a 194 cm giant named T8, reached speeds of 37.3 km/h. This is only slightly slower than Usain Bolt at the 2008 Beijing Olympics, and probably indicates that T8 could have run even faster if he was put on a rubberised track in spiked shoes.

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Webb's estimates have, of course, been recently questioned, and it is true that calculation of running speed from fossilised tracks is open to varying interpretations. Yet much of our disbelief of the physical feats of pre-modern men is not based on proper scientific scepticism, but on the pseudo-sceptical belief that if we just reject the remarkable we're being true to scientific principles.

There is also the problem that many of us assume we ourselves are the highest benchmark of human achievement, and that all evidence to the contrary must be unreliable. Sometimes, however, science really is remarkable, and the evidence totally believable, as several references from ancient Greek historians illustrate.

In the 4th century BCE, the Greek soldier and author Xenophon wrote that an oar-powered Athenian warship, a trireme, could row from Byzantium to Heraclea, 236 km away, in a day – meaning that Athenian oarsmen averaged 7–8 knots over a 12–16-hour trip. Xenophon wasn't boasting: he simply mentioned the figure in passing, so his estimate is almost certainly true.

Exercise physiologists thus attempted to duplicate the feat in 2007, but were astonished to find that trained modern rowers could manage just 6 knots, and then for only an hour. They simply couldn't reach the VO_2max (the benchmark of oxygen use and energy output) needed. Since the city of Athens alone had more than 30,000 of these oarsmen, the implication is that even ordinary Greek galleymen were as fit as, or possibly fitter than, modern elite athletes.

How could this be? After all, sports science, and particularly nutrition, have improved dramatically since ancient Greek days. Nutrition in the Athenian navy, for example, was so primitive that oarsmen ate little but barley mixed with olive oil and wine. Men today are also around 10 cm bigger, thanks to our improved nutrition, than ancient Greek men.

So how were the undernourished, diminutive Athenians able to row us out of the water with their superior speed and endurance? It seems unlikely that genetics could explain their athleticism and our sloth as we are all still, essentially, the same people. Instead, the explanation seems to come down to lifestyle.

Recall that we mentioned earlier how physical anthropologists can measure strength from fossil bones because those bones grew larger in response to muscular stress. What causes the muscular stress, of course, is exercise – lots of it.

High levels of strenuous physical activity, particularly at a young age, have a strong developmental influence on growth. This is why ancient humans like Neanderthals and *Homo erectus* had such thick

Ancient Greek galleymen rowed faster and for longer than modern elite rowers.
Credit: iStockphoto

bones and strong muscles in the first place. A telling fact is that only modern competitive athletes like champion tennis players have bones anywhere near as big as those ancient humans. Every day in the life of a Neanderthal, it seems, was a Wimbledon final.

The same principle is probably responsible for the remarkable speed and endurance of the Greek oarsmen. The bones of ancient Greeks are not as robust as those of Neanderthals, but they are denser and stronger than the average modern man's. That's because everybody in ancient Greece, not just oarsmen, lived tough lives featuring lots of strenuous exercise.

One of the quickest ways to develop very strong bones, for example, is to live in mountainous country. Greece just happens to be the most mountainous country in Europe. Even Greek aristocrats walked everywhere and maintained a highly athletic culture from early youth. Studies of how quickly ancient Greek children developed robust bones also seem to show that they began working on labour-intensive adult tasks from the age of 3 onwards.

No matter how diligently a modern athlete trains, it's pretty hard to match a gruelling regimen like that.

However disheartening the news, then, there is apparently some consolation to be taken from the superior feats of Neanderthal armwrestlers, ice age Aboriginal runners and ancient Greek super-sailors. While they may have dented our pride by besting us thoroughly in physical strength, there turns out to be hope for us after all.

True, we might not be able to recover the super-sharp vision of Thomas Chaseland or the explosive muscular power of our earliest hominin ancestors, both of which are genetically governed. But we could match the solid bones of *Homo ergaster* and *Homo erectus*, the fleet feet of ice age Aboriginal men, and the unwearying endurance of Athenian rowers. All we'd have to do is take a brief holiday from our generally couch-potato lives. There are, however, two problems.

The first is that even the most dedicated gym junky rarely matches the level of exertion that many tribal peoples do. For example the Tarahumara, a cave-dwelling people from northern Mexico famed for their endurance running, produce about 42,000 kJ of work effort during one of their 24–48-hour "kickball" races – more than modern Tour de France competitors.

Then there's the problem that human strength develops most of all in one very specific window in our adolescent years. The same study that found tennis players have arm bones almost as robust of those of *Homo erectus* also showed that these developmental effects are most pronounced between the ages of 8 and 14.

I had my own confirmation of this while researching my book, *Manthropology*, when a physical trainer in the Australian army told me that recruits from the 1980s onwards began flunking out of basic training with shin splints and fractures to their weakened leg bones because they'd all worn soft-soled runners as kids rather than the hard leather shoes of earlier generations.

So while our children could, it seems, regain the glories of our ancestors (if we only heed the lesson and expose them to the environmental stresses those ancestors faced), we ourselves have apparently missed our chance. There's nothing left for us except to lie back and smile wryly: the weak truly have inherited the Earth.

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