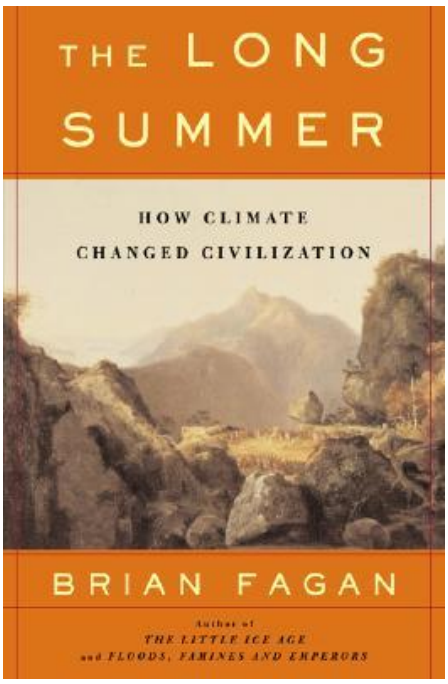

The Long Summer: How Climate Changed Civilization

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Humanity evolved in an Ice Age in which glaciers covered much of the world. But starting about 15,000 years ago, temperatures began to climb. Civilization and all of recorded history occurred in this warm period, the era known as the Holocene-the long summer of the human species. In *The Long Summer*, Brian Fagan brings us the first detailed record of climate change during these 15,000 years of warming, and shows how this climate change gave rise to civilization. A thousand-year chill led people in the Near East to take up the cultivation of plant foods; a catastrophic flood drove settlers to inhabit Europe; the drying of the Sahara forced its inhabitants to live along the banks of the Nile; and increased rainfall in East Africa provoked the bubonic plague. *The Long Summer* illuminates for the first time the centuries-long pattern of human adaptation to the demands and challenges of an ever-changing climate-challenges that are still with us today.

The Long Summer: How Climate Changed Civilization Details

Date	:	Published December 29th 2004 by Basic Books (first published June 1st 2003)
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From Reader Review The Long Summer: How Climate Changed Civilization for online ebook

Brett says

This is a book that forces us to take the long view. Though it contains brief asides about the possible consequences of human-caused climate change, it is mostly concerned with the changing climates of the past 15,000 years or so.

Fagan makes a strong case that climactic fluctuations played an important, and sometimes even decisive, role in the rise and fall of early human societies. The book covers changes in Europe, the Middle East, and America. His thesis, if we extrapolate it to the present, may give readers a bit of a chill: that societies tend to become more complex over time, collecting in larger urban centers creating supply chains can simultaneously produce more food for area inhabitants, but also are vulnerable to sustained climatic change. In essence, cities grow, and more and more people are no longer subsistence farmers. They diversify into other trades and a cultural and economic web forms which gives us all kinds of good things, but also relies heavily on area land to continue producing food at expected rates. A year or two of bad harvests can be tolerated, but sustained drought, flooding, or other dramatic change over decades or centuries cannot.

By implication he suggests we may be at or near another such crossroads in our own time. In ancient societies, inhabitants could move to new lands and abandon their cities. This option has become less and less tenable over time, as new land is not simply sitting around for the taking the way it may have been in 10,000 B.C.

In one truly stunning passage, Fagan describes the way the Black Sea formed in a matter of months after the collapse of an enormous ice sheet in North America forced water levels to rise around the globe. It boggles my mind to imagine this. He claims the water would have rise at a rate of 15 inches every day, submerging all kinds of infrastructure and destroying human settlements and lives.

My middling star rating doesn't have much to do with the content of the Long Summer. It's mostly because the writing did not engage me and staying awake was a major challenge. This is one of those books that I think would have made a better long article. The same points could have been made in a 50 page essay and lay-readers such as myself would be just as well-off as they are having read all 250 pages of this book.

That quibble aside, this book has deepened my understanding of what climate change has done to humans in the past and what it might do again in the future. It's a good addition to my climate-related reading list.

Mary says

The theme of this book is the dance between human population growth and changes in the environment in which those peoples lived (and live now).

Jan-Maat says

If you are interested in systems the argument presented here is intriguing. Societies, Fagan tells us, reacted to the environmental stresses caused by changing climates through increasing complexity. Increasing social or technological complexity, however, carried the seeds of its own destruction through increased risk and greater vulnerability. It is a picture that is a far cry from the relaxed agriculture of Stone Age Economics in which families are happy to operate well below the presumed carrying capacity of the land - though the societies discussed by Sahlin seem to be less complex on the whole than the ones Fagan looks at here.

However complexity enables and drives further population growth until the system exceeds the environmental carrying capacity. Fagan invokes the Anasazi of the American south-west here, just like Lewin in Complexity, but also the civilisations of the ancient middle-east and Old Kingdom Egypt among others.

I'm fascinated reading this, by the variation in the climate - before 11,000 BC the area of modern Syria was covered in forests dominated by Oak and Pistachio, not just the highlands but today's arid plains too. On the other hand in California the 20th century, it turns out, was unusually wet compared to its climate history as a whole. Over the long term big changes can completely change the environment we have lived in, equally relatively small changes can stress societies to destruction when they have expanded to the maximum their agricultural technology can support.

There is a sense of the abundance of nature, one study showed that a family group could gather enough wild einkorn (an ancestor of modern bread wheat) without sickles, scythes or knives in three weeks to feed themselves for a year but also of the amount of hard work required, visible on the skeletal remains of people (particularly as one might expect those of women), to process some unlikely food stuffs like acorns. One has to marvel at the person who first cracking open and chewing up a bitter acorn decided that it would be worth while grinding it up, then washing the remains in water - a process that would take seven hours of labour - to see if they could make something almost palatable out of it.

It impresses me again to realise what a society can achieve without leaving the stone age. Stone barbed arrows are both sharper, lighter and more damaging than metal equivalents as a researcher found when out hunting with Ishi (view spoiler). Densely populated urban civilisations were made possible not through the use of metals but through raised fields, irrigation and compost.

On the downside this book has a limited scope - sub-Saharan Africa and Asia aren't discussed at all, although there is space for repetition. The maps are scrappy with inaccurate labelling and Fagan writes some odd things. In addition to the five litres of beer he assumes as a standard Egyptian daily ration(view spoiler) he states of hunter gatherers that the women would join another group if all their men died in a hunting accident. How bizarre. Firstly it is impossible to know what a hypothetical group of people would have done in such an odd circumstance. If that is what has been known to happen among contemporary or observed hunter gathers then it would be better to have said that. Secondly this curiously destructive hunting accident example conjures up an image of early man insisting on demonstrating just how super sharp his new spear point is with fatal effect on himself and all his fellows. Requiescat in pace, may such enthusiasm never be forgot.

The climate in Fagan's opinion is a major driver of human history. Climate determines what can be grown where and therefore changes to the climate force or enable human adaptation. It's a humbling thesis that puts people in truer proportion to the rest of the natural world.

Aaron Arnold says

Mark Twain supposedly once said "Everybody talks about the weather but nobody does anything about it", I guess as a commentary on how helpless human beings are over the vast power of nature. Well, these days humanity is certainly doing something about the weather in the form of dumping tons of greenhouse gases into the atmosphere each year, but it's under-appreciated how vulnerable we still are to unusual weather events, how dependent on complex climate patterns modern civilization is, and also how fortunate we are to have come of age as a species in an unusually long spell of (relatively) moderate climate across the whole planet. Indeed, without particular confluences of abrupt climate disequilibria, we'd probably still be hanging around Olduvai Gorge.

According to Fagan, primitive peoples were doing just fine in their native ecosystems for tens of millennia, wandering around their veldts and steppes, chasing the seasons and the prey animals, until a series of climate shifts allowed them to expand beyond their traditional homelands and colonize the whole planet. He documents a whole series of climate "pumps" - in the first stage a group of humans has settled a particular area and is hemmed in by resources or inhospitable conditions. Then a shift allows that group to expand a little bit farther, either to take advantage of new opportunities or under pressure from another group trying to compete for its homeland. Then the climate shifts again, and since the group can't stay where it is and it can't go back to where it was, it's forced out into new lands. After a few cycles of expand, explore, consolidate, and expand again, groups of hunter-gatherers had been pushed to every corner of the globe, sometimes carrying old technology with them but often being forced to innovate and adapt to new environments and food sources along the way. At some point in recent history an unusually long period of relative calm began - and I say "relative" only because Fagan recounts numerous examples of the often catastrophic effects that even single-year events like late rains or exceptionally cold winters had on medieval and classical civilization - and humanity was able to build the foundations of intensive agriculture and far-flung trade networks that all modern societies have inherited. There's a consistent theme of the fragility of civilization, as groups coalesce into tribes, then into states, then into empires, only to disintegrate after rainfall patterns shifted.

It concurs with a good deal of Jared Diamond's Collapse, albeit from strictly climate-based perspective rather than resource-based. I always enjoy these broad high-level popular science history books because they give you new ways to look at the world. For example, in not too long the American Southwest, which for many many years was a nearly waterless desert, will have to make tough choices about what kind of lifestyle they can afford in the face of what is guaranteed to be an astronomical increase in the price of water. Up until now, the US has been rich enough (and wet enough) to have all the golf courses and hilariously non-native crops that it wanted, wherever it wanted, but very slight shifts in climate could render the lifestyles of tens of millions of people not just unsustainable, but unsupportable period. The abandoned dwellings in Chaco Canyon make for excellent tourist attractions, but it doesn't take a huge stretch of the imagination to wonder if Phoenix could end up the same way, and what the implications would be for the rest of the country. Closer to home, the landscape of my own native Texas Hill Country has changed greatly from its settlement by cotton farmers to its current infestation by cedar trees, the only thing hardy enough to grow on the edge of the great western desert (for more on the heartbreak this caused would-be farmers, see the beginning of Robert Caro's superb Path to Power). If rain fell consistently just a few meridians to the west, then the economy of all of North America would be very different, and it's cool to speculate on that sort of thing.

Fagan doesn't really go into much of the what-ifs, but I was a little mystified by his tendency to end every chapter in the same way - after pages and pages of sober, well-sourced historical discussion, he would launch into a few closing paragraphs of fervid speculation about the spiritual beliefs of the Clovis people or Siberian

nomads or whoever. It's not a huge deal, but the contrast between the detached and scientific sections talking about the contents of paleolithic waste dumps and the feverishly prolix sections about the meanings of cave paintings was very noticeable. However, his overall metaphor of civilization as a huge ship blundering in treacherous seas was well-chosen, and ably conveys the risk and uncertainty involved in building our cities and our lives in places so easily affected by changes in climate.

Clare O'Beara says

I enjoyed this look at the progress of humans and then their civilisations, as affected by the climate shifts. For instance we get very visual descriptions of the Sahara (and Gobi later) as expanding with green from extra rainfall on the edges, this green being seized upon by cattle herders while it lasts. This is now observable by satellite. Giraffes and hippos were immortalised in stone paintings in lands that are now desert.

The Fertile Crescent was at one time a good place to grow crops and herd sheep and goats, which the author tells us were the first domesticated animals. How about dogs? I did not find one mention of dogs. These are thought to have been adopted from wolf litters by Ice Age nomadic hunter gatherers who kept them when they turned to herding. Also cats; these were domesticated for rodent catching as long as we had granaries, and what was obviously a pet cat was buried with a child in Cyprus 9,500 years ago.

Early civilisations like Ur and Tell Leilan are discussed, how people came together because there was a surplus of food if they worked together to irrigate and harvest and store. At times the people became dependent on foods like acorns or other tree nuts that took hours to process each day, and this work was left to women, as we see from wear on their bones, from crouching and grinding the nuts. (No mill wheels. Odd how they didn't invent something more efficient.) When long droughts - a hundred years or more - moved the area where trees could thrive, the people had to plant new crops or move. Every time a farmer group up and left, they would now move into a wooded land already peopled.

We learn about the first treks across the Bering Straits, perhaps some of the way by boat, following seals and fish, some by walking as glacial retreat permitted. No mention of the possibility that people walked through a glacial runoff tunnel, literally a tunnel under the ice sheet where melting water had carved long runnels. This is given as a possibility for crossing Alaska, by some studying the Native American myth which says that the first peoples came from an earlier world through a long dark tunnel through the earth to the world they now inhabit.

The Roman world thrived due to warming which pushed the ecotone, the boundary between two climate zones, further north on Europe and allowed much grain, fruit and other crops to be grown. But when the climate shifted the cold further south again the Gauls of Germany were able to descend as the Romans, deprived of harvests and tributes, fell back towards the Mediterranean. Similarly the Egyptians needed the waters of the Nile to provide food and believing this to be gods - sent, they did not take other steps like digging deep wells, just depended on the rains and prayers.

I enjoyed seeing all the sites marked on maps where various settlements are excavated, volcanic dust found and tree rings dated, ice cores examined, to piece together climate and natural occurrences. Even history can be looked at differently once we know that climate allowed many happenings and caused other mishaps.

The early 1300s are the years without summer in Europe. We learn about populations shrinking as harvest

failed year after year. But no mention of the later calamity, the Black Death, which was able to spread so easily that century because the population was weakened by having undergone famine and lack of sun in youth. No mention either of the depletion of the Greenland population, a colony of Denmark which was unable to survive the onset of cold and lack of support from the plague-struck mother country.

I was fascinated by the cause of so many cold spells - the sudden flood of freshwater or ice off North America into the North Atlantic. Time after time this occurred as the globe warmed. On one occasion, the waters of the Atlantic spilled over into the Med, which then spilled over the Bosphorous into a large lake which continued to rise to become the Black Sea, probably the Biblical and other mythological Flood as there would have been constant rain, drowning many villages.

No mention of the excavation of the middens of eastern North American Native villages, which depended on elk and left their bones for generations, then started hunting more deer as well, finally deer bones alone, as the trees moved with changing weather. MesoAmerican civilisations are covered, and one in west South America, mainly because they too irrigated and grew crops.

With humans thriving as they produced food and starving as food ran scarce, moving on, the human population has eaten all the wildlife of the world, which now consists of two percent of the animal life on Earth, compared to 98% being humans and their livestock. Today there is nowhere unclaimed to move to, which is why climate migrants are coming to Europe. Today we have poured so much CO2 and other gases into the air that we are artificially warming the world. In the past millions died every time the climate changed. Today we think we should not let that happen, but nor do we do much to stop unsustainable populations from multiplying. I think we need to make food aid dependent upon accepting contraceptive injections, and plant more trees.

I borrowed this book from the Royal Dublin Society Library. This is an unbiased review.

Carlos says

A sweeping history of the post-Ice Age migrations of humans over the last 18,000 years. This is a great book, and it answers so many questions about why people ended up in the pockets of the world in which they did, as well as why and how agriculture developed where it did. The one problem I have with it is that Fagan has this apprehension about what he calls "environmental determinism", i.e. the idea that it could be said that the environment is the reason that certain things happened, say the development of agriculture. He calls this misguided, and a viewpoint that (in hyperbolic terms, I assume) nearly destroyed this type of research. Then he goes on to write at least two books that show how much climate determined exactly these types of things. I think this is probably more representative of his generation (1930s) than a real issue. One more minor problem with his book is his view that there was some sort of worldwide post Ice Age disaster that caused the extinction of large mammals. He goes out of his way to discuss how it could not have been the subsequent warm-weather population explosion of humans and the invention of new technologies that drove the extinctions. This seems to be the same type of thinking that leads to the idea that climate is too large to be seriously affected by humans, and seems increasingly a minority viewpoint.

Sydney Williams says

Fascinating look at how global weather patterns shape the rise, fall, and adaptation of civilizations. I wish their had been more of a formal comparison of new world vs. old world adaptations to drought, rather than simply a brief nod to a few Native American civilizations at the end of the book. Also, there is no mention of East Asian civilizations (Chinese, Korean, Japanese, Indian, Indonesian), which I found very odd.

Susanna - Censored by GoodReads says

Interesting.

For further review, see: http://susannag.booklikes.com/post/22... .

P. says

Fagan is a science writer who proposes that civilization was 'changed' by climate. He attempts to link climactic variations to: the ebb and flow of human settlement of North, the rise of civilizations dependant on farming, the extinction of North American megafauna, etc. His engine of change, civilization, evolution (both physical and cultural) is climate. He firmly rejects the Pleistocene over-kill hypothesis and links the "Younger Dryas" to the reversal or cessation of the Atlantic conveyer belt. He is a fervent believer in anthropogenic warming through greenhouse gas emissions. From the Vostok cores and other sources, he says civilization arose in a warmer, "long summer". He cannot predict the course of the future cycles of climate on earth now and in the present, but can discern their possible outcomes and is disturbed that the reality of anthropogenic climate change may cause the reversal of the North Atlantic conveyer circulation resulting in the freezing of Europe, etc.

He also concludes based on possibly analogous reasoning from present and recent past societies that the CroMagnons had religion, shamans, etc. He also details the fate and career of many societies that arose because of climate change and fell because of climate change. Anasazi, Mayan, etc.

Tim Martin says

The Long Summer by Brian Fagan is in essence a follow up of his excellent earlier work, _The Little Ice Age_, a book that explored the effect of a particular climatic episode on European civilization between the years 1300 and 1850. Fagan expanded his focus greatly in _The Long Summer_ as in this work he analyzed the effects of various climatic events since 18,000 B.C. on the course of Stone Age life, early farming societies, and the evolution of civilizations in Europe, southwest Asia, north Africa, and the Americas, covering climatically-influenced human history from the settlement of the Americas to the origins of the Sumerians to the conquest of Gaul by Rome (which was fascinating) through the end of the Mayan and Tiwanaku civilizations (in Central and South America respectively). As in _The Little Ice Age_, Fagan dismissed both those who discounted the role climatic change had played in transforming human societies and those who believed in environmental determinism (the notion that climate change was the primary cause of major developments in human civilization).

Fagan provided many examples of climatic change affecting human history. Between 13,000 and 8,000 B.C. Europe became covered in forest thanks to warming climates and retreating glaciers. This climatic change -

and resulting alteration in the ecology of the region - lead to the extinction of the large and medium-sized herd animals that were the favored prey of the Cro-Magnons (such as the mammoth, woolly rhinoceros, giant deer, and reindeer) and their replacement by smaller, generally more dispersed game like red deer, wild boar, and aurochs. Not only did this change in fauna lead to a change in hunting techniques, it also lead to an increased reliance on plant food and in general a much broader diet that included nuts, seeds, tubers, fruit, and fungi. Other changes included increased mobility - and the end of cave art, as tribes and bands were no longer attached to certain areas - and the development of the bow and arrow, much more effective in dense forest against solitary, skittish prey.

While Europeans adjusted to a world without megafauna, by 11,000 B.C. a group known as the Kebarans became dependent upon a relatively moist area of oak and pistachio forests that extended from modern Israel through Lebanon and into much of modern Syria. Though not developing agriculture per se, as they did not plant crops but rather relied on wild plants, they nevertheless developed some of the early signs of agriculture, such as pestles, mortars, and other tools to process the seeds and nuts that they harvested, the Kebarans relying on the millions of acorns and pistachios that they collected each year, supplemented by wild grass seeds and wild gazelles.

While the development of permanent Kebaran villages anchored to groves of nut-bearing trees and grass stands was a response to climatic and ecological changes brought on by the end of the Ice Age, their eventual end was also largely brought upon by the onset of a series of intense droughts thanks to a remarkable and seemingly distant event around 11,000 B.C.; the draining of the immense Lake Agassiz, a huge meltwater lake that lapped the retreating Laurentide ice sheet for 1,100 km in modern day Canada and the U.S. The lake rose so much that it eventually burst its banks and flooded into what is now Lake Superior and then onto to the Labrador Sea. So much Agassiz meltwater floated atop the dense, salty Gulf Stream that for ten centuries that conveyor of warm, moist air to Europe ceased, among other things plunging southwestern Asia into a thousand year drought. This drought eliminated the groves that the Kebarans depended upon, ending their prehistoric society, though not before the first experiments with cultivating wild grasses. Eventually villages arose that existed primarily dependent and then completely dependent upon cereal agriculture, on grain crops planted and harvested by the people themselves. In such places as Abu Hureyra in modern Syria full-fledged farming arose by 9500 B.C. as a response to drought, to the end of the oak-pistachio belt and the decline of game.

Just as drought lead to early experiments with pre-agricultural communities and then to the actual cultivation of grains, it may have also lead to the domestication of wild goats and sheep in southwestern Asia and of cattle in what would become the Sahara Desert. The arid conditions for instance in southwestern Asia between 11,000 and 9500 B.C. lead to a concentration of game and of humans around the increasingly few permanent water sources, an event that would allow hunters to intimately know individual herds, even individual animals, allowing for these ancient humans to learn how to control the few key members of herds, to selectively cull undesirable members to change the characteristics of that herd's offspring, and how to eventually capture and pen some or all of the herd for later consumption.

It was amazing to me how different the climate and terrain of ancient man truly was. Those who discount the effects of climatic change upon human history should consider how different the world of 6200 BC was. In this year - the time of the famed flat-roofed settlement of Catalhoyuk in central Turkey - farmers lived on the shores of the vast, brackish Euxine Lake to the north of the Anatolian plateau (what would become the Black Sea) and the Laurentide glacier was still retreating in northern Canada. In this year (more or less) began what has been called the Mini Ice Age as vast amounts of Laurentide meltwater suppressed the Gulf Stream, plunged Europe into colder and drier conditions, produced a profound drought in the Mediterranean, and caused ocean waters to rise so that Britain was finally severed from the continent.

Also quite interesting were the several prehistoric societies Fagan touched upon, such as the Kebarans, the `Ubaid people of 5800 B.C. southern Mesopotamia (they predate the Sumerians), the Linearbandkeramik communities of 5600 B.C. Europe, and the early fifth millennium B.C. Badarians of the Nile Valley, groups I was completely unfamiliar with.

Ahmed Omer says

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Julien Rapp says

Is climate change real? Of course, it is. The earth is a dynamic place. The sun is a dynamic star. The universe itself is ever changing.
I am writing this as a review of three books I have reread this year. Two are by Brian Fagan, and one by Steven Mithen. They cover ice ages, warming periods, and their effects on human development and the rise of civilizations.
Climate change is a natural phenomenon. What isn’t natural, is how our behavior is a new element in the equation of climate change. We have the capacity to make rapid changes that the environment, the creatures that share this world with us, and even ourselves, can’t adapt to fast enough.
These books give us a look at the effects of climate change at a slower, preindustrial pace. They can serve as a benchmark of the dark side of what our achievements have brought. They look at climate change from a historical and archaeological perspective. They tell the story of climate through the eyes of our own history and how these changes affected us.
While these books cover a period of about 20,000 years, our greatest influence as a growing factor in our earth’s climate is less than 200 years.

Yasmeen Mahmoud Fayez says

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Anne Dunham says

We are intrinsically enmeshed with the weather.

This book takes us on a trip through the history of the world through the eyes of everyman. It is an amazing journey. It compels us to live with humans starting with the Cro-Magnons of 18,000 years ago as they emerged from their caves to hunt beasts and gather wild berries. We follow our ancestors through the Ice Age, through climate warming and cooling, through droughts and deluges, as they encountered abundance and starvation, as they moved with the changes, developed houses, villages and cities. This is not an imaginary journey. It is documented with astonishing accuracy from ice core samples taken from Greenland to the Antarctic, pollen samples, artifacts, tree rings, isotopes found in bones and teeth, from every facet on scientific study.

The scope of this book does not lend itself to a quick read. A few pages a night left my mind reeling. But I looked forward to continuing this slow trek through time night after night. It has made me more human. The world has been shaped by the weather. And it will continue to be. How will it affect future generations? I would love to arrange for a visit in 1,000 or 10,000 years to see.

Chris says

Where he possibly can he sticks to examples of climate change affecting man in the Americas and Europe - where his target audience lives. The middle-east is there because he cant get away without it. But I would like to have read something of China, south-east Asia, India, Australia and sub-Saharan Africa. That's a lot of the world, and a lot of civilization that he has not even mentioned.
I haven't read any of his other books but I feel I will recognise pieces if I do, as I felt that this book was a rehash of some of his other books plus bits he had not found a place for. I have a couple of his books on my reading list, so I will find out in due course.
I think recent studies on Neanderthals (eg some modern humans have traces of Neanderthal DNA) would throw out his interpretation for their demise but it is an area where there is a lot of debate and insufficient evidence, as yet.
I got fed up with his giving an interpretation of, say, Cro-Magnon society as if it were fact: "Shamans defined human existence in chant and song with oral traditions and familiar tales". Possibly, but lets hear the evidence for it. There are plenty of other places where supposition is aired as fat.
