January 22, 2014

We don't have <u>Thomas Sowell</u> often enough. So, we'll correct for that today. First he compares three politicians.

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It would scarcely have been more astonishing if there had been a talking giraffe. For reasons unknown, most Republican leaders seem to pay very little attention to articulation — certainly as compared to leading Democrats, who seem to pay little attention to anything else.

Governor Christie's nearly two-hour-long press conference last week showed again that he is in a class by himself when it comes to Republicans who can express themselves in the heat of political battle.

When it comes to policies, I might prefer some other Republican as a 2016 presidential candidate. But the bottom line in politics is that you have to get elected, in order to have the power to accomplish anything. It doesn't matter how good your ideas are, if you can't be bothered to articulate them in a way that the voting public can understand.

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He met the questions head on and gave unequivocal answers — the kind of answers that could, and should, destroy his political future if they are not true.

More important, Governor Christie quickly fired the people he held responsible for deliberately creating a traffic jam on the George Washington Bridge. Contrast that with the many scandals in Washington for which President Obama has not fired anyone. ...

Next, Mr. Sowell writes on fact-free liberals.

Someone summarized Barack Obama in three words — "educated," "smart" and "ignorant." Unfortunately, those same three words would describe all too many of the people who come out of our most prestigious colleges and universities today.

President Obama seems completely unaware of how many of the policies he is trying to impose have been tried before, in many times and places around the world, and have failed time and again. Economic equality? That was tried in the 19th century, in communities set up by Robert Owen, the man who coined the term "socialism." Those communities all collapsed.

It was tried even earlier, in 18th century Georgia, when that was a British colony. People in Georgia ended up fleeing to other colonies, as many other people would vote with their feet in the 20th century, by fleeing many other societies around the world that were established in the name of economic equality.

But who reads history these days? Moreover, those parts of history that would undermine the vision of the left — which prevails in our education system from elementary school to postgraduate study — are not likely to get much attention.

The net results are bright people, with impressive degrees, who have been told for years how brilliant they are, but who are often ignorant of facts that might cause them to question what they have been indoctrinated with in schools and colleges. ..

The last item from **Thomas Sowell** is about the administration's war against black children.

Anyone who has still not yet understood the utter cynicism of the Obama administration in general, and Attorney General Eric Holder in particular, should look at the Justice Department's latest interventions in education.

If there is one thing that people all across the ideological spectrum should be able to agree on, it is that better education is desperately needed by black youngsters, especially in the ghettoes. For most, it is their one chance for a better life.

Among the few bright spots in a generally dismal picture of the education of black students are those successful charter schools or voucher schools to which many black parents try to get their children admitted. Some of these schools have not only reached but exceeded national norms, even when located in neighborhoods where the regular public schools lag far behind.

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In short, Louisiana's attempt to improve the education of children is subordinated by Holder to the federal government's attempt to mix and match black and white students. ...

Michael Barone posts on the possible sale of art from Detroit's museum.

As someone who grew up in <u>Detroit</u> and its suburbs, I am sad about the possibility that the Detroit Institute of Arts may have to sell off much of its collection due to the bankruptcy of its owner, the Detroit city government. So I share much of the dismay expressed by Jed Perl in this article in <u>the New Republic</u>. But I'm also sympathetic to some of the arguments Virginia Postrel made in her <u>Bloomberg column</u> last June. She notes that most of the DIA's masterpieces were purchased with municipal funds and that local donors never provided the museum with a significant endowment. Rather coolly she writes:

"A sale to satisfy Detroit's creditors would certainly be a tragedy for the institution and its local constituents. But if buyers were limited to other museums, possibly even to museums in the U.S., the works wouldn't disappear from public view. A sale could be a huge boon for art lovers (and tourists) in cities that had the bad luck to grow primarily in the second half of the 20th century — and that are still growing today. The public trust is no less served by art in Atlanta, Phoenix or Seattle than it is by art in Detroit."

The history of fine arts is, among other things, a history of the creation and then the dispersal of great collections. For a fascinating example, see art historian Francis Haskell's posthumously published <u>The King's Pictures</u>, the story of how King Charles I and his courtiers the Duke of Buckingham, the Duke of Hamilton and the Earl of Arundel amassed great collections in the 1620s and 1630s and then how these collections were sold off under the Parliament that rebelled against Charles. ...

It was about 10,000 years ago that humans started asking the question; "Got milk?" **Nature** magazine writes on the milk revolution in human history.

In the 1970s, archaeologist Peter Bogucki was excavating a Stone Age site in the fertile plains of central Poland when he came across an assortment of odd artefacts. The people who had lived there around 7,000 years ago were among central Europe's first farmers, and they had left behind fragments of pottery dotted with tiny holes. It looked as though the coarse red clay had been baked while pierced with pieces of straw.

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Roffet-Salque's sleuthing is part of a wave of discoveries about the history of milk in Europe. Many of them have come from a \in 3.3-million (US\$4.4-million) project that started in 2009 and has involved archaeologists, chemists and geneticists. The findings from this group illuminate the profound ways that dairy products have shaped human settlement on the continent.

During the most recent ice age, milk was essentially a toxin to adults because — unlike children — they could not produce the lactase enzyme required to break down lactose, the main sugar in milk. But as farming started to replace hunting and gathering in the Middle East around 11,000 years ago, cattle herders learned how to reduce lactose in dairy products to tolerable levels by fermenting milk to make cheese or yogurt. Several thousand years later, a genetic mutation spread through Europe that gave people the ability to produce lactase — and drink milk — throughout their lives. That adaptation opened up a rich new source of nutrition that could have sustained communities when harvests failed.

This two-step milk revolution may have been a prime factor in allowing bands of farmers and herders from the south to sweep through Europe and displace the hunter-gatherer cultures that had lived there for millennia. ...

Jewish World Review Christie, Hillary and Obama by Thomas Sowell

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While the creation of a traffic jam in a small New Jersey town shows the calloused ugliness too often found among political operators puffed up with their own power, this cannot compare with the threat to freedom when the Internal Revenue Service targets the administration's political opponents during an election year.

Nor can a traffic jam compare with the Department of Justice's gun-running operation that led to the death of an American Border Patrol agent in the southwest or the State Department's actions and inactions that led to the deaths of four American officials killed by terrorists in Benghazi.

Nevertheless, media coverage of the traffic jam in New Jersey was several times as extensive as any — or all — of these far more consequential scandals in Washington. Moreover, many of these media reactions simply assumed that Governor Christie must have known about the traffic jam on the George Washington Bridge.

Does anyone who thinks that a traffic jam at the George Washington Bridge should attract a governor's attention have any idea how many traffic jams there are on the various highways leading into Manhattan?

The Long Island Expressway, for example, long ago acquired the title, "the world's longest parking lot." Traffic backed up heading into, or out of, the Holland Tunnel or the Lincoln Tunnel is nothing new. My recollections of driving on highways in and around Manhattan include very few memories of free-flowing traffic.

Any governor who devoted his time to looking into traffic jams between New Jersey and New York would have very little time left for doing anything else.

If anything good comes out of this shabby episode of political vindictiveness by Governor Christie's staffers, it showed what a skewed sense of perspective most of the media have on what kinds of issues are important. It is not that the media consider traffic jams more important than human lives. But the fact that Christie is the current frontrunner for the Republican presidential nomination in 2016 — and is ahead of Hillary Clinton in the polls — makes him a target for a partisan media.

Given that blatant partisanship, the need for a Republican candidate in 2016 who can make his case to the public, in spite of the media, is especially acute — even though it is much too early to try to predict who that candidate will be.

Whatever the political fate of Governor Christie, he has provided an example of the kind of articulation that is needed — indeed, imperative — if the Republicans are to have any chance of rescuing this country from the ruinous policies of the past few years.

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Recently Kirsten Powers repeated on Fox News Channel the discredited claim that women are paid only about three-quarters of what a man is paid for doing the same work.

But there have been empirical studies, going back for decades, showing that there is no such gap when the women and men are in the same occupation, with the same skills, experience, education, hours of work and continuous years of full-time work.

Income differences between the sexes reflect the fact that women and men differ in all these things — and more. Young male doctors earn much more than young female doctors. But young male doctors work over 500 hours a year more than young female doctors.

Then there is the current hysteria which claims that people in the famous "top one percent" have incomes that are rising sharply and absorbing a wholly disproportionate share of all the income in the country.

But check out a Treasury Department study titled "Income Mobility in the U.S. from 1996 to 2005." It uses income tax data, showing that people who were in the top one percent in 1996 had their incomes fall — repeat, fall — by 26 percent by 2005.

What about the other studies that seem to say the opposite? Those are studies of income brackets, not studies of the flesh-and-blood human beings who are moving from one bracket to another over time. More than half the people who were in the top one percent in 1996 were no longer there in 2005.

This is hardly surprising when you consider that their incomes were going down while there was widespread hysteria over the belief that their incomes were going up.

Empirical studies that follow income brackets over time repeatedly reach opposite conclusions from studies that follow individuals. But people in the media, in politics and even in academia, cite statistics about income brackets as if they are discussing what happens to actual human beings over time.

All too often when liberals cite statistics, they forget the statisticians' warning that correlation is not causation. For example the New York Times crusaded for government-provided prenatal care, citing the fact that black mothers had prenatal care less often than white mothers — and that there were higher rates of infant mortality among blacks.

But was correlation causation? American women of Chinese, Japanese and Filipino ancestry also had less prenatal care than whites — and lower rates of infant mortality than either blacks or whites.

When statistics showed that black applicants for conventional mortgage loans were turned down at twice the rate for white applicants, the media went ballistic crying racial discrimination. But whites were turned down almost twice as often as Asian Americans — and no one thinks that is racial discrimination.

Facts are not liberals' strong suit. Rhetoric is.

Jewish World Review Politics Versus Education

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Anyone who has still not yet understood the utter cynicism of the Obama administration in general, and Attorney General Eric Holder in particular, should look at the Justice Department's latest interventions in education.

If there is one thing that people all across the ideological spectrum should be able to agree on, it is that better education is desperately needed by black youngsters, especially in the ghettoes. For most, it is their one chance for a better life.

Among the few bright spots in a generally dismal picture of the education of black students are those successful charter schools or voucher schools to which many black parents try to get their children admitted. Some of these schools have not only reached but exceeded national norms, even when located in neighborhoods where the regular public schools lag far behind.

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When the state of Louisiana decided to greatly expand the number of schools available to students by parental choice, rather than by the rigidities of the usual public school system, Attorney General Holder's Justice Department objected on grounds that this was at cross-purposes with the federal government's racial integration goals for the schools.

In short, Louisiana's attempt to improve the education of children is subordinated by Holder to the federal government's attempt to mix and match black and white students.

If we have learned nothing else after decades of socially divisive and educationally futile racial busing, it should be obvious that seating black kids next to white kids is neither necessary nor sufficient to get them a better education.

The truly despicable intervention by Attorney General Holder is his warning to schools against discipline policies that result in a higher proportion of minority students than white students being punished.

This racial body count method of determining whether there is discrimination by the schools might make sense if we were certain that there could be no differences in behavior that would explain the differences in punishment. But does any sane adult really believe that there cannot be any difference between the behavior of black boys and Asian girls, for example?

There is a lot of make-believe when it comes to racial issues, whether out of squeamishness, political correctness or expediency. There is also a lot of deliberate racial polarization, and attempts to promote a sense of grievance and fear among black voters, in order to keep their votes in the Democrats' column.

What makes this playing politics with school discipline so unconscionable is that a lack of discipline is one of the crushing handicaps in many ghetto schools. If 10 percent of the students in a classroom are disruptive, disrespectful and violent, the chances of teaching the other 90 percent effectively are very low.

Yet, in the words of the New York Times, "The Obama administration speaks out against zero tolerance discipline." It quotes Attorney General Holder and says that he was "on the mark" when he said that a "routine school disciplinary infraction should land a student in the principal's office, not in a police precinct."

In other words, Eric Holder, sitting in Washington, knows better than the thousands of people who run public schools across the country what kinds of sanctions are necessary to preserve some semblance of order in the classrooms, so that hoodlums do not make the education of their classmates impossible.

Like the New York Times, Attorney General Holder has made this an issue of "The Civil Rights of Children." More important, the implied threat of federal lawsuits based on racial body count among students who have been disciplined means that hoodlums in the classroom seem to have a friend in Washington.

But even the hoodlums can end up worse off, if lax discipline in the school lets them continue on in a way of life that usually ends up inside prison walls. Nevertheless, if all this means black votes for the Democrats, that may well be the bottom line for Holder and the Obama administration.

Examiner <u>Detroit Institute of Arts sell-off wouldn't be the first</u> by Michael Barone

As someone who grew up in <u>Detroit</u> and its suburbs, I am sad about the possibility that the Detroit Institute of Arts may have to sell off much of its collection due to the bankruptcy of its owner, the Detroit city government. So I share much of the dismay expressed by Jed Perl in this article in <u>the New Republic</u>. But I'm also sympathetic to some of the arguments Virginia Postrel

made in her <u>Bloomberg column</u> last June. She notes that most of the DIA's masterpieces were purchased with municipal funds and that local donors never provided the museum with a significant endowment. Rather coolly she writes:

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"When on 10 January 1642 Charles I left London for the last time until his forced return to be tried and executed seven years later, the concentration of great paintings in his capital was so great that, if on that day, you had chosen to go for a stroll through the centre of town it would have taken you barely half an hour to pass the principal palaces in which were to be found masterpieces of a kind unrivalled, in quantity and quality, in any other single city in Europe, except for Rome and perhaps Madrid, and capable indeed of standing comparison with what could be seen in all of them combined." But the Titians and Veroneses, Raphaels and Holbeins were sold off, never to be seen in England again. "The dispersal of the Stuart collections — even more than their formation — represents one of the most important movements in the history of European taste and collecting as a whole," Haskell writes. "The artistic map of Europe was transformed, so that it is no exaggeration to claim that a series of sales between 1643 and 1654 decidedly influenced which works have entered national canons of art history, and even affected their holiday destinations."

Haskell provides a vivid picture of the Stuart era collections in their brief stay in London, one as affectionate and affecting as Jed Perl's beautiful evocation of the DIA. But Haskell's story is a reminder that a sales of the Detroit masterpieces would not be the first, or the largest, such episode in art history.

Nature <u>Archaeology: The milk revolution</u> When a single genetic mutation first let ancient Europeans drink milk, it set the stage for a continental upheaval.

by Andrew Curry



In the 1970s, archaeologist Peter Bogucki was excavating a Stone Age site in the fertile plains of central Poland when he came across an assortment of odd artefacts. The people who had lived there around 7,000 years ago were among central Europe's first farmers, and they had left behind fragments of pottery dotted with tiny holes. It looked as though the coarse red clay had been baked while pierced with pieces of straw.

Looking back through the archaeological literature, Bogucki found other examples of ancient perforated pottery. "They were so unusual — people would almost always include them in publications," says Bogucki, now at Princeton University in New Jersey. He had seen something similar at a friend's house that was used for straining cheese, so he speculated that the pottery might be connected with cheese-making. But he had no way to test his idea.

The mystery potsherds sat in storage until 2011, when Mélanie Roffet-Salque pulled them out and analysed fatty residues preserved in the clay. Roffet-Salque, a geochemist at the University of Bristol, UK, found signatures of abundant milk fats — evidence that the early farmers had used the pottery as sieves to separate fatty milk solids from liquid whey. That makes the Polish relics the oldest known evidence of cheese-making in the world.

Roffet-Salque's sleuthing is part of a wave of discoveries about the history of milk in Europe. Many of them have come from a €3.3-million (US\$4.4-million) project that started in 2009 and has involved archaeologists, chemists and geneticists. The findings from this group illuminate the profound ways that dairy products have shaped human settlement on the continent.

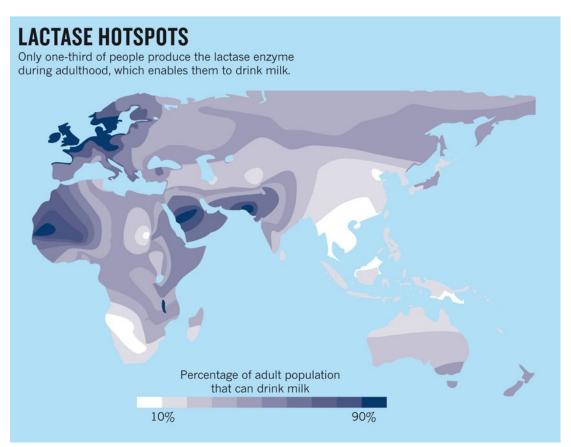
During the most recent ice age, milk was essentially a toxin to adults because — unlike children — they could not produce the lactase enzyme required to break down lactose, the main sugar in

milk. But as farming started to replace hunting and gathering in the Middle East around 11,000 years ago, cattle herders learned how to reduce lactose in dairy products to tolerable levels by fermenting milk to make cheese or yogurt. Several thousand years later, a genetic mutation spread through Europe that gave people the ability to produce lactase — and drink milk — throughout their lives. That adaptation opened up a rich new source of nutrition that could have sustained communities when harvests failed.

This two-step milk revolution may have been a prime factor in allowing bands of farmers and herders from the south to sweep through Europe and displace the hunter-gatherer cultures that had lived there for millennia. "They spread really rapidly into northern Europe from an archaeological point of view," says Mark Thomas, a population geneticist at University College London. That wave of emigration left an enduring imprint on Europe, where, unlike in many regions of the world, most people can now tolerate milk. "It could be that a large proportion of Europeans are descended from the first lactase-persistent dairy farmers in Europe," says Thomas.

Strong stomachs

Young children almost universally produce lactase and can digest the lactose in their mother's milk. But as they mature, most switch off the lactase gene. Only 35% of the human population can digest lactose beyond the age of about seven or eight (ref. <u>2</u>). "If you're lactose intolerant and you drink half a pint of milk, you're going to be really ill. Explosive diarrhoea — dysentery essentially," says Oliver Craig, an archaeologist at the University of York, UK. "I'm not saying it's lethal, but it's quite unpleasant."



Most people who retain the ability to digest milk can trace their ancestry to Europe, where the trait seems to be linked to a single nucleotide in which the DNA base cytosine changed to thymine in a genomic region not far from the lactase gene. There are other pockets of lactase persistence in West Africa (see <u>Nature 444, 994–996; 2006</u>), the Middle East and south Asia that seem to be linked to separate mutations³ (see '<u>Lactase hotspots</u>').

The single-nucleotide switch in Europe happened relatively recently. Thomas and his colleagues estimated the timing by looking at genetic variations in modern populations and running computer simulations of how the related genetic mutation might have spread through ancient populations⁴. They proposed that the trait of lactase persistence, dubbed the LP allele, emerged about 7,500 years ago in the broad, fertile plains of Hungary.

Powerful gene

Once the LP allele appeared, it offered a major selective advantage. In a 2004 study⁵, researchers estimated that people with the mutation would have produced up to 19% more fertile offspring than those who lacked it. The researchers called that degree of selection "among the strongest yet seen for any gene in the genome".

Compounded over several hundred generations, that advantage could help a population to take over a continent. But only if "the population has a supply of fresh milk and is dairying", says Thomas. "It's gene–culture co-evolution. They feed off of each other."

To investigate the history of that interaction, Thomas teamed up with Joachim Burger, a palaeogeneticist at the Johannes Gutenberg University of Mainz in Germany, and Matthew Collins, a bioarchaeologist at the University of York. They organized a multidisciplinary project called LeCHE (Lactase Persistence in the early Cultural History of Europe), which brought together a dozen early-career researchers from around Europe.

By studying human molecular biology and the archaeology and chemistry of ancient pottery, LeCHE participants also hoped to address a key issue about the origins of modern Europeans. "It's been an enduring question in archaeology — whether we're descended from Middle Eastern farmers or indigenous hunter-gatherers," says Thomas. The argument boils down to evolution versus replacement. Did native populations of hunter-gatherers in Europe take up farming and herding? Or was there an influx of agricultural colonists who outcompeted the locals, thanks to a combination of genes and technology?

One strand of evidence came from studies of animal bones found at archaeological sites. If cattle are raised primarily for dairying, calves are generally slaughtered before their first birthday so that their mothers can be milked. But cattle raised mainly for meat are killed later, when they have reached their full size. (The pattern, if not the ages, is similar for sheep and goats, which were part of the dairying revolution.)

DAIRY DIASPORA

Dairying practices spread from the Middle East to Europe as part of the Neolithic transition from hunting and gathering to agriculture.



Piece of a roughly 7,000-year-old sieve used to make cheese.

6,500 YEARS AGO Well-developed dairy economy established in central Europe.

7,500 YEARS AGO Lactase persistence, the ability to drink milk in adulthood, emerges in central Europe.

8,000 YEARS AGO Neolithic reaches the Balkans.

8,400 YEARS AGO Neolithic spreads to Greece.

11,000–10,000 YEARS AGO Neolithic culture develops in the Middle East. This is the start of agriculture and possibly the domestication of dairy animals.

On the basis of studies of growth patterns in bones, LeCHE participant Jean-Denis Vigne, an archaeozoologist at the French National Museum of Natural History in Paris, suggests that dairying in the Middle East may go all the way back to when humans first started domesticating animals there, about 10,500 years ago⁶. That would place it just after the Middle Eastern Neolithic transition — when an economy based on hunter-gathering gave way to one devoted to agriculture. Dairying, says Roz Gillis, also an archaeozoologist at the Paris museum, "may have been one of the reasons why human populations began trapping and keeping ruminants such as cattle, sheep and goats". (See '<u>Dairy diaspora</u>'.)

Dairying then expanded in concert with the Neolithic transition, says Gillis, who has looked at bone growth at 150 sites in Europe and Anatolia (modern Turkey). As agriculture spread from Anatolia to northern Europe over roughly two millennia, dairying followed a similar pattern.

On their own, the growth patterns do not say whether the Neolithic transition in Europe happened through evolution or replacement, but cattle bones offer important clues. In a precursor study², Burger and several other LeCHE participants found that domesticated cattle at Neolithic sites in Europe were most closely related to cows from the Middle East, rather than indigenous wild aurochs. This is a strong indication that incoming herders brought their cattle with them, rather than domesticating locally, says Burger. A similar story is emerging from studies of ancient human DNA recovered at a few sites in central Europe, which suggest that Neolithic farmers were not descended from the hunter-gatherers who lived there before⁸.

Taken together, the data help to resolve the origins of the first European farmers. "For a long time, the mainstream of continental European archaeology said Mesolithic hunter-gatherers developed into Neolithic farmers," says Burger. "We basically showed they were completely different."

Milk or meat

Given that dairying in the Middle East started thousands of years before the LP allele emerged in Europe, ancient herders must have found ways to reduce lactose concentrations in milk. It seems likely that they did so by making cheese or yogurt. (Fermented cheeses such as feta and cheddar have a small fraction of the lactose found in fresh milk; aged hard cheeses similar to Parmesan have hardly any.)

To test that theory, LeCHE researchers ran chemical tests on ancient pottery. The coarse, porous clay contains enough residues for chemists to distinguish what type of fat was absorbed during the cooking process: whether it was from meat or milk, and from ruminants such as cows, sheep and goats or from other animals. "That gave us a way into saying what types of things were being cooked," says Richard Evershed, a chemist at the University of Bristol.

"It's been an enduring question in archaeology — whether we're descended from Middle Eastern farmers or indigenous hunter-gatherers."

Evershed and his LeCHE collaborators found milk fat on pottery in the Middle Eastern Fertile Crescent going back at least 8,500 years⁹, and Roffet-Salque's work on the Polish pottery¹ offers clear evidence that herders in Europe were producing cheese to supplement their diets between 6,800 and 7,400 years ago. By then, dairy had become a component of the Neolithic diet, but it was not yet a dominant part of the economy.

That next step happened slowly, and it seems to have required the spread of lactase persistence. The LP allele did not become common in the population until some time after it first emerged: Burger has looked for the mutation in samples of ancient human DNA and has found it only as far back as 6,500 years ago in northern Germany.

Models created by LeCHE participant Pascale Gerbault, a population geneticist at University College London, explain how the trait might have spread. As Middle Eastern Neolithic cultures moved into Europe, their farming and herding technologies helped them to out-compete the local hunter-gatherers. And as the southerners pushed north, says Gerbault, the LP allele 'surfed' the wave of migration.

Lactase persistence had a harder time becoming established in parts of southern Europe, because Neolithic farmers had settled there before the mutation appeared. But as the agricultural society expanded northwards and westwards into new territory, the advantage provided by lactase persistence had a big impact. "As the population grows quickly at the edge of the wave, the allele can increase in frequency," says Gerbault.

The remnants of that pattern are still visible today. In southern Europe, lactase persistence is relatively rare — less than 40% in Greece and Turkey. In Britain and Scandinavia, by contrast, more than 90% of adults can digest milk.

Cattle conquest

By the late Neolithic and early Bronze Age, around 5,000 years ago, the LP allele was prevalent across most of northern and central Europe, and cattle herding had become a dominant part of the culture. "They discover this way of life, and once they can really get the nutritional benefits they increase or intensify herding as well," says Burger. Cattle bones represent more than two-thirds of the animal bones in many late Neolithic and early Bronze Age archaeological sites in central and northern Europe.

The LeCHE researchers are still puzzling out exactly why the ability to consume milk offered such an advantage in these regions. Thomas suggests that, as people moved north, milk would have been a hedge against famine. Dairy products — which could be stored for longer in colder climes — provided rich sources of calories that were independent of growing seasons or bad harvests.

Others think that milk may have helped, particularly in the north, because of its relatively high concentration of vitamin D, a nutrient that can help to ward off diseases such as rickets. Humans synthesize vitamin D naturally only when exposed to the sun, which makes it difficult for northerners to make enough during winter months. But lactase persistence also took root in sunny Spain, casting vitamin D's role into doubt.

The LeCHE project may offer a model for how archaeological questions can be answered using a variety of disciplines and tools. "They have got a lot of different tentacles — archaeology, palaeoanthropology, ancient DNA and modern DNA, chemical analysis — all focused on one single question," says lan Barnes, a palaeogeneticist at Royal Holloway, University of London, who is not involved in the project. "There are lots of other dietary changes which could be studied in this way."

The approach could, for example, help to tease apart the origins of amylase, an enzyme that helps to break down starch. Researchers have suggested that the development of the enzyme may have followed — or made possible — the increasing appetite for grain that accompanied the growth of agriculture. Scientists also want to trace the evolution of alcohol dehydrogenase, which is crucial to the breakdown of alcohol and could reveal the origins of humanity's thirst for drink.

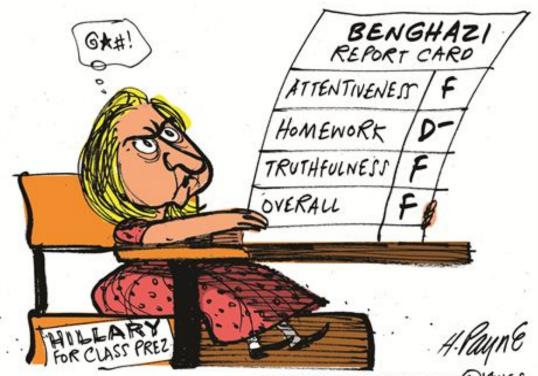
Some of the LeCHE participants are now probing further back in time, as part of a project named BEAN (Bridging the European and Anatolian Neolithic), which is looking at how the first farmers and herders made their way into Europe. Burger, Thomas and their BEAN collaborators will be in Turkey this summer, tracing the origins of the Neolithic using computer models and ancient-DNA analysis in the hope of better understanding who the early farmers were, and when they arrived in Europe.

Along the way, they will encounter beyaz peynir, a salty sheep's-milk cheese eaten with nearly every Turkish breakfast. It is probably much like the cheese that Neolithic farmers in the region would have eaten some 8,000 years ago — long before the march of lactase persistence allowed people to drink fresh milk.





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