August 16, 2015

From the **NY Times**, we learn part of the Lost Colony of Roanoke Island, NC might have been found.

MERRY HILL, N.C. — Under a blistering sun, Nicholas M. Luccketti swatted at mosquitoes as he watched his archaeology team at work in a shallow pit on a hillside above the shimmering waters of Albemarle Sound. On a table in the shade, a pile of plastic bags filled with artifacts was growing. Fragments of earthenware and pottery. A mashed metal rivet. A piece of a hand-wrought nail.

They call the spot Site X. Down a dusty road winding through soybean fields, the clearing lies between two cypress swamps teeming with venomous snakes. It is a suitably mysterious name for a location that may shed light on an enigma at the heart of America's founding: the fate of the "lost colonists" who vanished from a sandy outpost on Roanoke Island, about 60 miles east, in the late 16th century.

On and off for three years, Mr. Luccketti and colleagues with the First Colony Foundation have been excavating parts of the hillside, hoping to find traces of the colonists. As if clues in a latter-day treasure hunt, hidden markings on a 16th-century map led them to the spot on the sound's western shore, which Mr. Luccketti had previously surveyed.

Mr. Luccketti, 66, chose his words carefully as he described the fruits of their latest work. "I'm trying to make sure that I say this correctly," he said. "We have evidence from this site that strongly indicates that there were Roanoke colonists here." ...

... The story of the Lost Colony of Roanoke has long lent a spooky note to grade schoolers' study of American history. In 1587, an intrepid Englishman named John White took more than 100 settlers to Roanoke Island, which lies inside the chain of barrier islands that is today called the Outer Banks. It was Sir Walter Raleigh's second attempt to colonize North Carolina, but the first to include civilians and families. White's granddaughter, Virginia Dare, was the first child born in the New World to English parents, just a few weeks after their arrival.

A resupply trip sent White back to England, but a naval war with Spain delayed his return. When he finally came back, three years after he left, the settlers had vanished, but they had left behind cryptic clues: ...

... The fact that the property was undisturbed was something of a miracle. Tucked into economically depressed and largely rural Bertie County, the land had been slated for development into more than 2,000 luxury condominiums, restaurants and a marina, but the plan collapsed after the financial crisis of 2008.

North Carolina law requires archaeological surveys before large coastal developments can proceed. By coincidence, the developers had hired Mr. Luccketti's outfit, the James River Institute for Archaeology, to survey the site in 2007. ...

The **Guardian, UK** reports on another mystery that might be solved. What happened to Neanderthals?

Dogs are humanity's oldest friends, renowned for their loyalty and abilities to guard, hunt and chase. But modern humans may owe even more to them than we previously realised. We may have to thank them for helping us eradicate our caveman rivals, the Neanderthals.

According to a leading US anthropologist, early dogs, bred from wolves, played a critical role in the modern human's takeover of Europe 40,000 years ago when we vanquished the Neanderthal locals.

"At that time, modern humans, Neanderthals and wolves were all top predators and competed to kill mammoths and other huge herbivores," says Professor Pat Shipman, of Pennsylvania State University. "But then we formed an alliance with the wolf and that would have been the end for the Neanderthal."

If Shipman is right, she will have solved one of evolution's most intriguing mysteries. Modern humans are known to have evolved in Africa. They began to emigrate around 70,000 years ago, reaching Europe 25,000 years later. The continent was then dominated by our evolutionary cousins, the Neanderthals, who had lived there for more than 200,000 years. However, within a few thousand years of our arrival, they disappeared. ...

From **Futurity** we learn sleeping on out sides is good for our brains.
Sleeping on your side—rather than your back or stomach—may be the best way to rid your brain of waste. It may even help reduce the chances of developing Alzheimer's, Parkinson's, and other neurological diseases.

Researchers used dynamic contrast magnetic resonance imaging (MRI) to image the brain's glymphatic pathway, a complex system that clears wastes and other harmful chemical solutes from the brain.

A lateral sleeping position is the best position to most efficiently remove waste from the brain. It's also the most common way to sleep for humans and many other animals. The buildup of brain waste chemicals may contribute to the development of Alzheimer's disease and other neurological conditions, researchers say. ...

And **Forbes** says there's more evidence coffee is good for your brain.
I know by now news on coffee research is a little hard to swallow, considering how often new studies come out with contradictory conclusions. But don't give up on coffee science just yet — a theme has emerged from the more credible studies, and the latest study in the dogpile is a worthy example.

So let's get right to the point: according to the latest study, drinking a consistent, moderate amount of coffee each day significantly reduces the risk of developing mild cognitive impairment (MCI), a precursor to dementia and Alzheimer's disease. ...

The Koreans (Southern ones. The ones in the north are imprisoned by a type of ape posing as friends of the people.) continue to amaze with their production of high quality consumer goods. Samsung is a good example. Hyundai cars are another. **WSJ-Rumble Seat** reviewed Hyundai's Genesis all wheel drive luxury sedan.
***TO ME, THE HYUNDAI BRAND** will forever seem like a major-league expansion team. It wasn't in the league when I was growing up—the Colorado Rockies? What kind of name is that,*

anyway?—so it will never own the full legitimacy of history no matter how many pennants it brings home.

And that's OK. We already have a Ford. Hyundai's role in the global passenger-car market is as an insurgent and disruptive force, shaking up the old franchises. No romance, no poetry, just a relentless, morally neutral march of commodity-car building across the globe. By unit sales, Hyundai is now the world's fifth largest auto maker. Hyundai's footprint in America includes California-based design studios, technical centers in Michigan and Arizona and vast assembly halls in Alabama, which disgorge daily fleets of crossovers and family haulers to driveways all over the northern continent. ...

*AWD **(All Wheel Drive)** availability has helped boost Genesis sales 60% in the past seven months, a pace which suggests pent-up demand. And then comes a raft, a slew, just a shopping list of stuff, some optional but a lot just kicked in, in the interests of invidious comparison. And whenever you talk about high-end Hyundais, you have to keep in mind all the optional equipment in the world doesn't add up to a luxury car. Here, the cabin is kind of joyless and a bit dated, design-wise. The Genesis' shared DNA with the Equus has imbued the smaller car with the big car's remoteness, in a segment where at least a few will still drive for the fun of it.*

But it's got some gear. Of most consequence is the Automatic Emergency Braking system, which acts on data from the lane-departure and smart cruise-control sensors. It could also be called the Inattentive Driver Assist system. If you happen to be changing the radio station or digging through your purse for the toll transponder and fail to slow for stopped traffic ahead, it will do its level utmost to brake the car to avoid or at a minimum mitigate impact. Every car should, and I predict, will soon have this function.

Oh but we are just getting started, Batman. There's the suite of Lane Change Assist, Blind-Spot Detection and Rear Cross-Traffic Alert systems that rely on rear-facing sensors to keep drivers apprised of what's coming up behind. Watching out front is the Lane Keeping Assist System (LKAS), which puts an electronic hand on the tiller if the driver begins to wander. ...

... Hyundai has also put a lot of equity into high-strength steel, as compared with aluminum construction; and the numbers look good. Hyundai claims the Genesis chassis torsional and bending stiffness now exceeds that of a BMW 5-series. The curb weight for the V6 AWD model is 4,295 pounds.

Meanwhile, the Genesis is one whole dress size bigger than its premium segment rivals: 123 cubic feet of interior space, according to Hyundai, handily outsizing an Mercedes E-class (113.1 cubic feet), whose numbers Hyundai was happy to provide.

Big, powerful, with an overqualified equipment list, the Genesis sedan makes a strong case for itself. And it is even, actually, handsome, with the masculine, single-frame grille up front and lovely strakes of chrome at the rocker panels. ...

NY Times

The Roanoke Island Colony: Lost, and Found?

by Theo Emery

A secluded cove off Salmon Creek near the dig site in North Carolina where archaeologists have discovered several pieces of Border ware and other materials that may suggest an early English settlement in the area.

MERRY HILL, N.C. — Under a blistering sun, Nicholas M. Luccketti swatted at mosquitoes as he watched his archaeology team at work in a shallow pit on a hillside above the shimmering waters of Albemarle Sound. On a table in the shade, a pile of plastic bags filled with artifacts was growing. Fragments of earthenware and pottery. A mashed metal rivet. A piece of a hand-wrought nail.

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Mr. Luccketti, 66, chose his words carefully as he described the fruits of their latest work. "I'm trying to make sure that I say this correctly," he said. "We have evidence from this site that strongly indicates that there were Roanoke colonists here."

In Chapel Hill, N.C., on Tuesday, the foundation will reveal its findings, which have been submitted for peer review, and the theory that at least a few of the settlers moved inland to Site X.

The announcement, along with separate findings from another excavation on a coastal island, is sure to stir excitement. Some scholars who have seen the evidence are supportive of the findings, but at least one sees the evidence as too slight to draw firm conclusions. All agree that more digging is needed. The new findings are likely to set off a new round of questions: Why would some of the settlers have split off to the inland site? Where did they go after that? And what became of the rest of the Roanoke colonists?

"We need to know more," said Eric Klingelhofer, a vice president for research at the foundation and a history professor at Mercer University in Macon, Ga. "This whole story is a blank — a blank page, a blank chapter of history, and I think archaeology is the only way to come up with answers."

The story of the Lost Colony of Roanoke has long lent a spooky note to grade schoolers' study of American history. In 1587, an intrepid Englishman named John White took more than 100 settlers to Roanoke Island, which lies inside the chain of barrier islands that is today called the Outer Banks. It was Sir Walter Raleigh's second attempt to colonize North Carolina, but the first

to include civilians and families. White's granddaughter, Virginia Dare, was the first child born in the New World to English parents, just a few weeks after their arrival.

A resupply trip sent White back to England, but a naval war with Spain delayed his return. When he finally came back, three years after he left, the settlers had vanished, but they had left behind cryptic clues: the word "Croatoan" carved into a fence post, and the letters "CRO" on a tree. Many people believe these referred to what is now Hatteras Island, 50 miles south. A search run by a separate group has been going on there for the last several years.

Part tragedy, part mystery, part historical curiosity, the fate of the colony and Virginia Dare has spawned a folkloric cottage industry, a mix of sober scholarship, wild speculation and at least one outright hoax. A widely held theory — though unproven — is that colonists hitched themselves to area tribes and gradually assimilated.

The most tantalizing clue in centuries as to the Lost Colonists' fate came in 2012, after the British Museum re-examined one of White's coastal maps for the First Colony Foundation. X-ray spectroscopy and other imaging techniques revealed that a patch hid a four-pointed blue and red star on the western end of Albemarle Sound. That spot, near the outlets of the Chowan River and Salmon Creek, roughly corresponded to White's oblique reference to a site 50 miles inland, which he mentioned in testimony he gave after trying to return to the colony.

James Horn, a foundation board member, had written a book hypothesizing that the location, with its protected harbor and a nearby Native American village, could have been a destination. The idea was without concrete evidence, though; while the map appeared to support it, only shovels in the ground could confirm it.

The fact that the property was undisturbed was something of a miracle. Tucked into economically depressed and largely rural Bertie County, the land had been slated for development into more than 2,000 luxury condominiums, restaurants and a marina, but the plan collapsed after the financial crisis of 2008.

North Carolina law requires archaeological surveys before large coastal developments can proceed. By coincidence, the developers had hired Mr. Luccketti's outfit, the James River Institute for Archaeology, to survey the site in 2007. The dig had turned up many Native American artifacts, which are common in the region — but also some European artifacts. At the time, Mr. Luccketti hypothesized that they had been left by later European settlers, from a nearby plantation or the homestead of a trader who arrived in the mid-1600s.

But the recent insights from the British Museum's analysis of the map prompted the foundation to re-examine the 2007 findings from Merry Hill and other dig sites in the region. A key to identifying the earliest colonial life was a type of ceramic known as Surrey-Hampshire Border ware, which was no longer imported to the New World after the Virginia Company dissolved in the early 17th century.

The reconsideration of the Site X artifacts led to a decision to explore further. With the landowner's cooperation, archaeologists began sifting the soil again in 2012.

Slowly, the pits gave up their secrets. In just the small areas excavated, the hillside has yielded an unusually high concentration of Border ware and other colonial artifacts, such as a food-storage jar called a baluster, a hook used to stretch hides, a buckle, and pieces of early gun flintlocks called priming pans. No signs of a fort or other structures have been found, but the aggregate of the artifacts convinced the archaeologists that at least a few of the colonists wound up there.

Mr. Luccketti insists on the caveat that only a small number — fewer than a dozen — were present for an indeterminate amount of time. "It wasn't the relocated colony — I keep emphasizing that — and we need to do some more work here to understand," he said.

Nicholas M. Luccketti, principal archaeologist at the James River Institute, holding Border ware fragments pulled from the ground near Merry Hill, N.C.

There are theories for other locations where colonists might have scattered to, including the one farther south, on Hatteras Island. That site has been known since the 1930s and in the past has yielded intriguing metal items such as a signet ring, part of a horse bridle, two 17th-century coins and part of the firing mechanism for a gun.

Over the last few years, a British archaeologist,Mark Horton, has led an excavation there. He, too, has found unusual artifacts, such as a rapier hilt, late 16th-century gun hardware and part of a slate writing tablet. Many of the 16th-century items were mixed in with artifacts from almost a century later, though, making it nearly impossible to date them. And no Border ware pottery — a telltale sign of habitation — has been found on the Hatteras site.

Mr. Horton, whose findings have not been published or peer reviewed, posits that colonists made their way south to Hatteras around 1590 and assimilated with the tribe there. After years of cohabitation, European items could have been gradually discarded long after they were brought to the site, which would account for their being mixed in with later detritus, he said in an interview.

“I don’t necessarily see that what we’ve found on Hatteras rules out their site, or vice versa,” he said.

Mr. Luccketti also said the two were not mutually exclusive; if the colonists split up, they could have ended up in multiple locations. But he says he believes Site X has stronger evidence of lost colonists because of the ceramics found there.

Carter L. Hudgins, the director of the graduate program in historic preservation at Clemson/College of Charleston, said, “Any evidence that helps open the door to this mystery, even if it’s just a little bit, is something folks have been looking for at least since John White’s return to the site in 1590.” While not directly affiliated with the foundation, Dr. Hudgins has volunteered at Site X and other foundation projects over the years.

Others are more circumspect. Charles R. Ewen, the president of the Society for Historical Archaeology and director of the Phelps Archaeology Laboratory at East Carolina University,

says he wants incontrovertible proof of 16th-century occupation, such as a European grave from the period.

He is also unconvinced that colonists removed to the Hatteras site, although the findings there could indicate contact between colonists and Native Americans. “I know we want a definitive answer, and there’s just not enough evidence yet from either site to say that, yes, this is where some of the lost colonists went,” he said. “I’m not cynical, but I haven’t seen enough evidence to say, yeah, you bet, I’m on board with that.”

For now, the foundation hopes to find funding to secure the 15 acres to excavate it thoroughly. Michael Flannelly, whose company owns the land, said he hoped to find a way for the archaeological work to proceed while allowing nearby land to be developed.

“It’s a 430-year-old mystery, and if I can be a part of solving that mystery, that’s something I’m interested in,” he said.

As the sun reached its zenith one day last week, the work began to slow. Mr. Luccketti retired to the shade, sweat dripping from his brow. Soon the pit would be filled, the sifting screens packed up and the work paused until the future of the site could be determined.

“Everyone has encouraged us that what we’re finding is really exciting and terribly significant,” he said, “and we just need to do some more here.”

The Guardian

How hunting with wolves helped humans outsmart the Neanderthals

Forty thousand years ago in Europe our ancestors formed a crucial and lasting alliance that enabled us to finish off our evolutionary cousins, the Neanderthals

by Robin McKie

Dogs are humanity’s oldest friends, renowned for their loyalty and abilities to guard, hunt and chase. But modern humans may owe even more to them than we previously realised. We may have to thank them for helping us eradicate our caveman rivals, the Neanderthals.

According to a leading US anthropologist, early dogs, bred from wolves, played a critical role in the modern human’s takeover of Europe 40,000 years ago when we vanquished the Neanderthal locals.

“At that time, modern humans, Neanderthals and wolves were all top predators and competed to kill mammoths and other huge herbivores,” says Professor Pat Shipman, of Pennsylvania State University. “But then we formed an alliance with the wolf and that would have been the end for the Neanderthal.”

If Shipman is right, she will have solved one of evolution’s most intriguing mysteries. Modern humans are known to have evolved in Africa. They began to emigrate around 70,000 years ago, reaching Europe 25,000 years later. The continent was then dominated by our evolutionary cousins, the Neanderthals, who had lived there for more than 200,000 years. However, within a few thousand years of our arrival, they disappeared.

The question is: what finished them off? Some scientists blame climate change. Most argue that modern humans – armed with superior skills and weapons – were responsible. Shipman agrees with the latter scenario, but adds a twist. We had an accomplice: the wolf.

Modern humans formed an alliance with wolves soon after we entered Europe, argues Shipman. We tamed some and the dogs we bred from them were then used to chase prey and to drive off rival carnivores, including lions and leopards, that tried to steal the meat.

“Early wolf-dogs would have tracked and harassed animals like elk and bison and would have hounded them until they tired,” said Shipman. “Then humans would have killed them with spears or bows and arrows.

“This meant the dogs did not need to approach these large cornered animals to finish them off – often the most dangerous part of a hunt – while humans didn’t have to expend energy in tracking and wearing down prey. Dogs would have done that. Then we shared the meat. It was a win-win situation.”

At that time, the European landscape was dominated by mammoths, rhinos, bison and several other large herbivores. Both Neanderthals and modern humans hunted them with spears and possibly bows and arrows. It would have been a tricky business made worse by competition from lions, leopards, hyenas, and other carnivores, including wolves.

“Even if you brought down a bison, within minutes other carnivores would have been lining up to attack you and steal your prey,” said Shipman. The answer, she argues, was the creation of the human-wolf alliance. Previously they separately hunted the same creatures, with mixed results. Once they joined forces, they dominated the food chain in prehistoric Europe – though this success came at a price for other species. First Neanderthals disappeared to be followed by lions, mammoths, hyenas and bison over the succeeding millennia. Humans and hunting dogs were, and still are, a deadly combination, says Shipman.

The idea is controversial, however, because it pushes back the origins of dog domestication so deeply into our past. Most scientists had previously argued the domestication of dogs, from tamed wolves, began with the rise of agriculture, 10,000 years ago, though other research has suggested it began earlier, around 15,000 years ago.

But Shipman places it before the last Ice Age, pointing to recent discoveries of 33,000-year-old fossil remains of dogs in Siberia and Belgium. Although they look quite like wolves, the fossils also show clear signs of domestication: snouts that are shorter, jaws that are wider and teeth that are more crowded than those of a wild wolf.

Thus we began to change the wolf’s appearance and over the millennia turned them into all the breeds of dog we have today, from corgis to great Danes. Intriguingly, they may have changed our appearances as well, says Shipman, whose book, *The Invaders: How Humans and Their Dogs Drove Neanderthals to Extinction*, will be published this month. Consider the whites of our eyes, she states. The wolf possesses white sclera as does *Homo sapiens* though, crucially, it is the only primate that has them.

“The main advantage of having white sclera is that it is very easy to work out what another person is gazing at,” added Shipman. “It provides a very useful form of non-verbal communication and would have been of immense help to early hunters. They would been able to communicate silently but very effectively.”

Thus the mutation conferring white sclera could have become increasingly common among modern humans 40,000 years ago and would have conferred an advantage on those who were hunting with dogs.

By contrast, there is no evidence of any kind that Neanderthals had any relationship with dogs and instead they appear to have continued to hunt mammoths and elks on their own, a punishing method for acquiring food. Already stressed by the arrival of modern humans in Europe, our alliance with wolves would have been the final straw for Neanderthals.

Nor does the story stop in Europe, added Shipman. “I would see this as the beginning of the humans’ long invasion of the world. We took dogs with us wherever we went after our alliance formed in the palaeolithic. We took them to America and to the Pacific Islands. They made hunting easy and helped guard our food. It has been a very powerful alliance.”

RISE AND FALL OF NEANDERTHALS

250,000 years ago The first Neanderthals appear in Europe.

200,000 years The first modern humans appear in Africa.

70,000 years The first modern humans leave Africa.

50-60,000 years Modern humans and Neanderthals share territory in Middle East.

45,000 years Modern humans enter Europe.

40,000 years Neanderthals disappear.

Futurity

Side sleeping may clean up ‘mess’ in brains

by Lauren Sheprow

Sleeping on your side—rather than your back or stomach—may be the best way to rid your brain of waste. It may even help reduce the chances of developing Alzheimer’s, Parkinson’s, and other neurological diseases.

Researchers used dynamic contrast magnetic resonance imaging (MRI) to image the brain’s glymphatic pathway, a complex system that clears wastes and other harmful chemical solutes from the brain.

A lateral sleeping position is the best position to most efficiently remove waste from the brain. It’s also the most common way to sleep for humans and many other animals. The buildup of brain waste chemicals may contribute to the development of Alzheimer’s disease and other neurological conditions, researchers say.

Researchers have used dynamic contrast MRI for several years to examine the glymphatic pathway in rodent models. The method helps identify and define the glymphatic pathway, where

cerebrospinal fluid (CSF) filters through the brain and exchanges with interstitial fluid (ISF) to clear waste—similar to the way the body's lymphatic system clears waste from organs.

Body posture and sleep quality

It's during sleep that the glymphatic pathway is most efficient. Brain waste includes amyloid β (amyloid) and tau proteins, chemicals that negatively affect brain processes if they build up.

In the new study, published in the *Journal of Neuroscience*, researchers used the dynamic contrast MRI method along with kinetic modeling to quantify the CSF-ISF exchange rates in anesthetized rodents' brains in three positions—lateral (side), prone (down), and supine (up).

"The analysis showed us consistently that glymphatic transport was most efficient in the lateral position when compared to the supine or prone positions," says Helene Benveniste, principal investigator and a professor of anesthesiology and radiology at Stony Brook University School of Medicine.

Most popular position

Benveniste and first-author Hedok Lee, assistant professor of anesthesiology and radiology developed the safe posture positions for the experiments. Lulu Xie, Rashid Deane, and Maiken Nedergaard, all at the University of Rochester, used fluorescence microscopy and radioactive tracers to validate the MRI data and to assess the influence of body posture on the clearance of amyloid from the brains.

"It is interesting that the lateral sleep position is already the most popular in human and most animals—even in the wild—and it appears that we have adapted the lateral sleep position to most efficiently clear our brain of the metabolic waste products that built up while we are awake," Nedergaard says.

"The study therefore adds further support to the concept that sleep subserves a distinct biological function of sleep and that is to 'clean up' the mess that accumulates while we are awake. Many types of dementia are linked to sleep disturbances, including difficulties in falling asleep.

"It is increasing acknowledged that these sleep disturbances may accelerate memory loss in Alzheimer's disease. Our finding brings new insight into this topic by showing it is also important what position you sleep in," she explains.

Researchers caution that while the research team speculates that the human glymphatic pathway will clear brain waste most efficiency when sleeping in the lateral position as compared to other positions, testing with MRI or other imaging methods in humans are a necessary first step.

Other researchers from Stony Brook, the University of Rochester, and New York University are coauthors of the study.

Source: Stony Brook University

Forbes

Here's More Evidence That Coffee Is Good For Your Brain

by David DiSalvo

I know by now news on coffee research is a little hard to swallow, considering how often new studies come out with contradictory conclusions. But don't give up on coffee science just yet — a theme has emerged from the more credible studies, and the latest study in the dogpile is a worthy example.

So let's get right to the point: according to the latest study, drinking a consistent, moderate amount of coffee each day significantly reduces the risk of developing mild cognitive impairment (MCI), a precursor to dementia and Alzheimer's disease.

The research team evaluated 1,445 people, ages 65-84, participating in the Italian Longitudinal Study on Aging, a population-based sample. They found that people who kept their daily coffee intake steady at one cup a day were in the best mental shape compared to others with more erratic coffee habits. Here's the full breakdown:

People who increased their coffee consumption over time to more than a cup a day (in other words, they were at some point one-cup drinkers and gradually inflated their habit) had twice the rate of MCI as people who reduced their habit to one or less cups a day.

Those who increased their habit also had a one and a half times higher rate of MCI than people with a steady one-cup-a-day routine.

People who consistently drank one to two cups a day had a lower rate of MCI than people who rarely or never consumed coffee.

So the theme from these results (and the theme emerging across coffee research overall) is that steady, moderate consumption gets the best results. Erratic consumption—especially increasing your habit—and no consumption are comparatively bad options.

Quoting the lead researchers of the latest study: "Moderate and regular coffee consumption may have neuroprotective effects… against MCI, confirming previous studies on the long-term protective effects of coffee, tea, or caffeine consumption and plasma levels of caffeine against cognitive decline and dementia."

The possible reasons for these results are legion, but most of them circle around the neuroprotective properties of a moderate but steady amount of caffeine in the brain. Brain imaging research is increasingly focusing on these properties to see how they play out across various brain areas, particularly those most susceptible to cognitive decline in the early stages of dementia.

The latest study was published in the *Journal of Alzheimer's Disease*.

WSJ - Rumble Seat

Hyundai Genesis: What Makes the Car an Automotive Star

Hyundai's role in the global passenger-car market is as an insurgent and disruptive force, shaking up the old franchises

by Dan Neil

GOOD HELP | A slew of technical driver-assistance features puts the Genesis on the map.

TO ME, THE HYUNDAI BRAND will forever seem like a major-league expansion team. It wasn't in the league when I was growing up—the Colorado Rockies? What kind of name is that, anyway?—so it will never own the full legitimacy of history no matter how many pennants it brings home.

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Occasionally readers will ask that I review more real-world cars and fewer six-figure sex machines. You command me, Effendi. It doesn't get more real than the redesigned 2015 Hyundai Genesis sedan.

Re: disruption. You will note the discreet H on the trunk lid and, on the tip of the car's nose, the winged Genesis emblem. Hyundai publicly debated opening a separate premium Genesis line, á la Toyota and Lexus, but chose to let the marketing chips ride on the Hyundai brand, at least in the U.S. And it is a bet, too, that there is sufficient elasticity in the name Hyundai to support sales of sedans costing nearly $70,000 (Equus) at the high end, $20,000 range (Veloster) at the low end, and in the middle, around $30,000, fleets of dependable, dispensable crossovers and family movers with virtually lifetime warranties, like the one my mother-in-law just bought.

(May I just take the reader aside to share something personal? With due humility I note, you know, I'm kind of a big deal, car critic for The Wall Street Journal and all that. I mean, she didn't even ask me. She just pulled up in a white Hyundai Tucson. What the hell, lady?)

Interestingly, the Genesis and Equus cars both dispense with Hyundai badging in the prestige-obsessed home market of Korea. And this ambivalence has produced something kind of subversive and wonderful: a luxury car virtually without badging, a car in a Schröedinger-esque, indeterminate state of being/not being premium. No one will know until he looks/doesn't look.

From low to high, Hyundai's pricing structure has historically emphasized an unsubtle arithmetic of hellastuff per dollar, and that hasn't changed. Consider our test car, the Genesis AWD 3.8 sedan. Competing with cars like BMW 335i xDrive and Jaguar XF 3.0 with all-wheel drive, the Genesis AWD 3.8 certainly specs out like a premium car: a near full-size (196.5 inches), rear-drive sedan with naturally aspirated V6 power and eight-speed automatic. Not too many of those around anymore. The Genesis sits on a new five-link sport-tuned suspension, front and rear, with variable damping and variable electric steering (in the Genesis 5.0's Ultimate Package) and some very ready rubber around 19-inch alloys.

For those craving the luxury of too much torque, Hyundai offers the big gun, the 5.0-liter V8. This directed-injected all-aluminum engine produces up to 420 hp, putting it in a three-way segment tie with the Cadillac CTS V6 and Infiniti V8. However, the AWD system is available only with the brilliant 3.8-liter V6 Lambda engine—the sensible choice anyway. The Lambda is a high-tech, high-comp monster (11.5:1) putting out 311 hp and 293 pound-feet in a quiet, sonorous hum.

AWD availability has helped boost Genesis sales 60% in the past seven months, a pace which suggests pent-up demand. And then comes a raft, a slew, just a shopping list of stuff, some optional but a lot just kicked in, in the interests of invidious comparison. And whenever you talk about high-end Hyundais, you have to keep in mind all the optional equipment in the world doesn't add up to a luxury car. Here, the cabin is kind of joyless and a bit dated, design-wise. The Genesis' shared DNA with the Equus has imbued the smaller car with the big car's remoteness, in a segment where at least a few will still drive for the fun of it.

But it's got some gear. Of most consequence is the Automatic Emergency Braking system, which acts on data from the lane-departure and smart cruise-control sensors. It could also be called the Inattentive Driver Assist system. If you happen to be changing the radio station or digging through your purse for the toll transponder and fail to slow for stopped traffic ahead, it will do its level utmost to brake the car to avoid or at a minimum mitigate impact. Every car should, and I predict, will soon have this function.

2015 Hyundai Genesis 5.0

The Hyundai Genesis featurs great seats, though the quality of leather is a bit mass-market. It is easy to get in and out and has lots of sightlines.

Base price: $40,500

Price, as tested: $52,400 (including $950 destination)

Powertrain: Naturally aspirated

direct-injection 3.8-liter DOHC 24-valve V6 with variable intake and valve timing; eight-speed torque converter automatic transmission; rear-biased all-wheel drive.

Horsepower/torque: 311 hp at 6,000 rpm/293 lb-ft at 5,000 rpm

Length/weight: 196.5 inches/4,295 pounds

Wheelbase: 118.5 inches

0-60 mph: 6.2 seconds (est.)

EPA fuel economy: 16/25/19 mpg, city/highway/combined

Trunk capacity: 15.3 cubic feet

Oh but we are just getting started, Batman. There's the suite of Lane Change Assist, Blind-Spot Detection and Rear Cross-Traffic Alert systems that rely on rear-facing sensors to keep drivers apprised of what's coming up behind. Watching out front is the Lane Keeping Assist System (LKAS), which puts an electronic hand on the tiller if the driver begins to wander.

You may be wondering, what if somebody were to hack your car's computer systems in such a way as to drive you over a cliff? That is a fascinating question. I trust the kids in the lab are working on that.

What's the new Genesis sedan like to drive? Mighty comfortable, it turns out. Great seats, though the quality of leather is a bit mass-market. Easy in and out. Lots of sightlines. Refined. Isolated. The back seat is huge.

The key driver of the character is an aggressive campaign against noise, vibration and harshness. The Genesis' every nook and cranny is caulked and foam-filled to attenuate unpleasant aural radiations. The door panels are thicker and glass-to-body gaskets revised for less wind noise.

Hyundai has also put a lot of equity into high-strength steel, as compared with aluminum construction; and the numbers look good. Hyundai claims the Genesis chassis torsional and bending stiffness now exceeds that of a BMW 5-series. The curb weight for the V6 AWD model is 4,295 pounds.

Meanwhile, the Genesis is one whole dress size bigger than its premium segment rivals: 123 cubic feet of interior space, according to Hyundai, handily outsizing an Mercedes E-class (113.1 cubic feet), whose numbers Hyundai was happy to provide.

Big, powerful, with an overqualified equipment list, the Genesis sedan makes a strong case for itself. And it is even, actually, handsome, with the masculine, single-frame grille up front and lovely strakes of chrome at the rocker panels.

In the end the Genesis feels a bit like a Moneyball-managed baseball club, a sabermetrics-optimized collection of the best parts, pieces and players available for the money. It might be postseason, it might even go all the way. But it's just not quite as much fun to root for.

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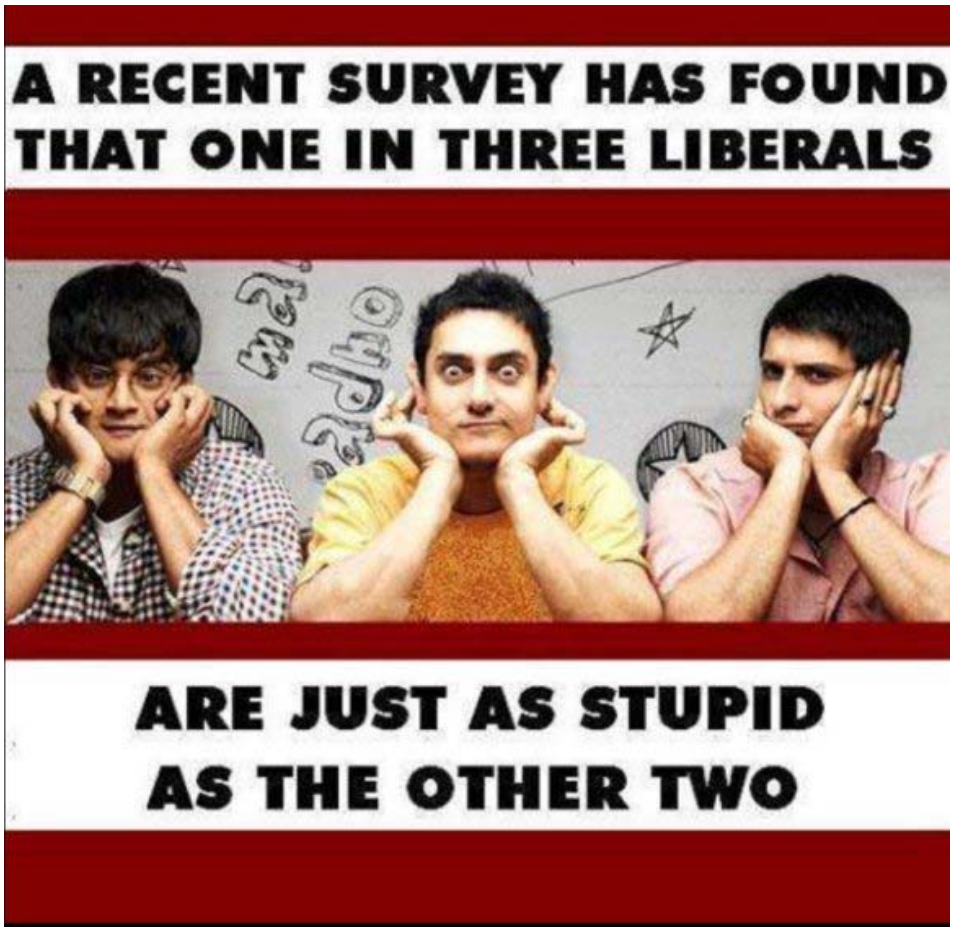
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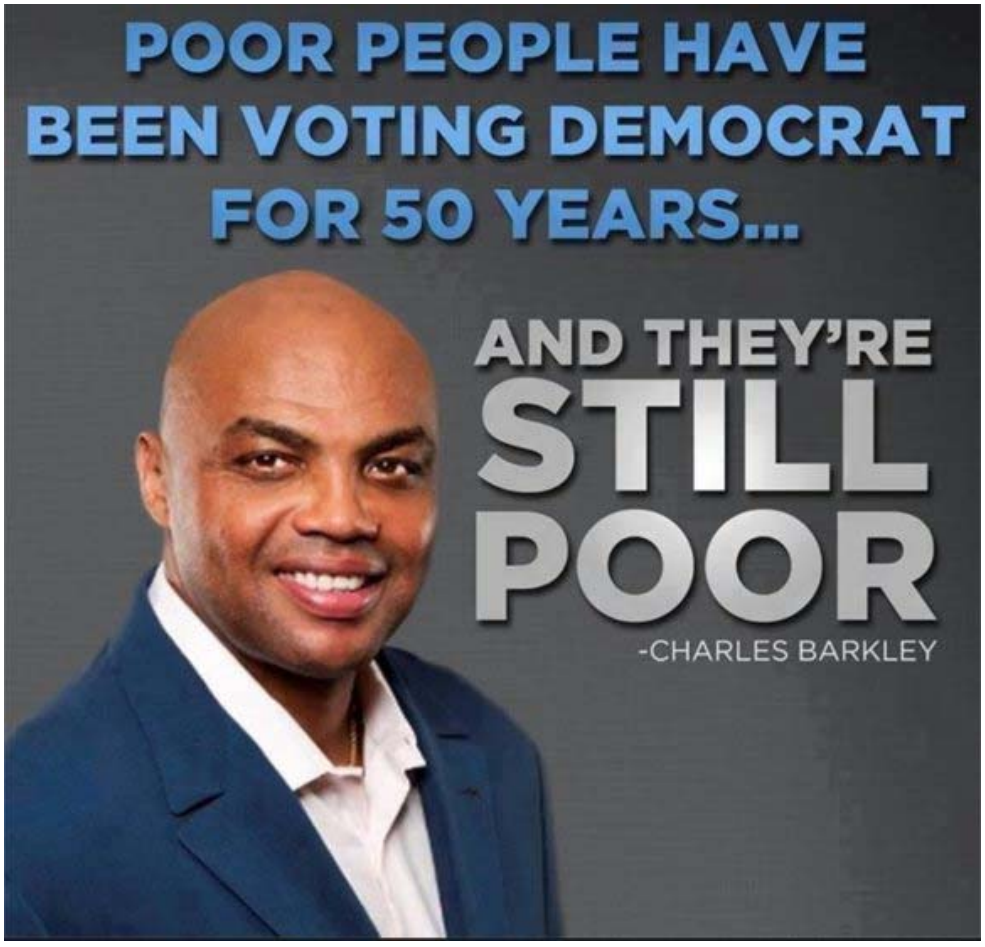
THAT ONE IN THREE LIBERALS
ARE JUST AS STUPID
AS THE OTHER TWO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