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Binghamton University
National News Hits

Summer 2015
No one wants their child to suffer, physically or mentally. So, if there was a relatively easy test that could predict your child’s risk of developing depression, wouldn’t you want to use it?

Depression is very difficult to deal with and affects all areas of one’s life. It’s the leading cause of disability in the United States, in adults ages 15 to 44, as it can make it difficult to work and maintain relationships. A person suffering from depression experiences intense emotions of anxiety, hopelessness, and negativity. And those feelings don’t just go away; they stay with the person.

One in ten Americans will be affected by depression at one point in their lives, and it isn’t something any parent wants for their child, especially if they themselves suffer from this illness.

A new study published in the Journal of Abnormal Psychology found that a relatively simple test can predict if a child has a higher risk of developing depression. The test mainly consists of looking at a child’s pupil responses when asked to look at a variety of faces.
Our pupils react to many things, including lightness and darkness, if we’re intoxicated or excited, various neurological conditions, and so on. The pupil’s movements are incredibly precise.

Scientists can detect and measure things like sleepiness, emotional states, sexual interests, race biases, moral judgments, schizophrenia, memory, attention, and even autism just from the dilation of our pupils.

Pupillometry is the science of using measurements of the pupil to make psychological predictions and gather predictive intelligence. Science has discovered that the harder you’re working to solve a problem, the more dilated your pupils become. Even nurses have been able to read the pupils of paralyzed patients to determine if their intention is a “yes” or “no” in answering important questions.

Brandon Gibb, professor of psychology at Binghamton University and director of the Mood Disorder Institute and Center for Affective Science, found that how a child’s pupils dilate in response to seeing an emotional image can predict his or her risk of depression.

In the study, 47 mother-child pairs were recruited. All the mothers had a history of major depressive disorder (MDD). The children were asked to view a variety of faces that were either sad, angry, or happy.

“The current findings suggest that physiological reactivity to sad stimuli, assessed using Pupillometry, serves as a potential biomarker of depression risk among children of depressed mothers,” said KL Burkhouse, one of the study’s authors.

As the children looked at the faces, the dilation of their pupils were measured. The researchers followed up with the children and interviewed them about their current mental state every six months over a two-year period.

This let the researchers know which children showed signs of depression and how long it took to develop it.

“We think that this line of research could eventually lead to universal screenings in pediatricians’ offices to assess future risk of depression in kids,” said Gibb.

If tests like these can predict future depression in children, hopefully they can also provide preventative treatments for this devastating illness.
The 25 Healthiest Colleges in the U.S.

The end of summer signals the start to a new school year. For many young adults that means heading back to college, and for some it means stepping onto campus for the first time.

There are lots of ways to rate these colleges, from the quality of academics to the party scene. We think an important—and often overlooked—metric is how healthy a university is. When putting together our list of the healthiest colleges, we looked for schools that go above and beyond to create an environment where students have access to an array of healthy food, top-notch fitness facilities, and robust medical and mental health services. For details on how we put together this ranking, scroll to the bottom of the list.

20. Binghamton University

Health and wellness have become a top priority since the university launched its B-Healthy initiative in 2013. Binghamton also became one of 20 colleges in the U.S. to join Partnership for a Healthier America’s campus initiative. Both of these programs aim to promote healthier lifestyles among undergrads, whether it’s providing sustainable food options in the dining halls or revamping the miles of walking trails around campus. Sourcing that sustainable, locally grown produce is made all the easier with the BU Acres Farm on campus. A highlight of every school year is the harvest festival when students and faculty pick crops—yellow squash, kale, pears, and apples—and prepare a feast for dinner.
How We Ranked the Colleges

We took all of the schools that made last year’s list and then asked our readers to submit additional nominations via social media. We rounded out our list of nominations with schools in the top 20 on Trojan’s Sexual Health Report Card as well as schools included in The Princeton Review’s lists for best campus food, best health services, best athletic facilities, best quality of life, and happiest students.

From there, we sent each nominated school a questionnaire asking about their dining services, fitness facilities and student healthcare. Our rankings take into account many criteria, including special dietary options on dining hall menus, number of fitness classes offered, and available mental health resources. After rating each college or university, we whittled the list down to the top 25 you see here.
Gourmet Daily Reports Foods That Could Be Causing You to Overeat

OAKLAND PARK, FL - Sep 4, 2015) - Instead of going for the hotdog this Labor Day, you might want to choose the grilled chicken. A new study conducted by researchers at Binghamton University, Washington State University, and the University of Washington has revealed a possible connection between high-fat diets and overeating. Using rats as subjects, researchers found that high-fat diets caused a significant change in the populations of gut bacteria. These changes in populations can result in inflammation that damage the nerve cells that carry signals from the gut to the brain. Cutting off the signals that indicate fullness.

Krzysztof Czaja, DVM, Ph.D., an associate professor of neuroanatomy at the University of Georgia and a principal investigator, explained, "The brain is changed by eating unbalanced foods. It induces inflammation in the brain regions responsible for feeding behavior. Those reorganized circuits and inflammation may alter satiety signaling."

Ever wonder why you couldn't stop at one slice of pizza and in turn ended up eating half a pie? It wasn't because you weren't full. It may have been because high-fat foods prevented your stomach from signaling your brain. This then would cause you to overeat. A solution would be to avoid unbalanced foods in general.

You should concentrate on eating foods that provide a variety of nutrients and avoid modified foods that are high in fat and sugar.

Of course this is always easier said than done. When it comes to eating a healthy and balanced diet, calories need to be monitored, portions need to be controlled, and nutritional labels need to be studied. With half of salaried workers working 50 hours or more, who has the time to do all that work when fast food is much easier to buy and eat? A saving grace has been meal providers and delivery services.
Companies such as Gourmet Daily make eating healthy and controlling your diet easier for the average working American by offering daily delivered meals that are balanced and pre-portioned.

The study is set to be presented at the Annual Meeting of the Society for the Study of Ingestive Behavior (an organization devoted to research into all aspects of eating and drinking behavior).

About Gourmet Daily

Gourmet Daily is the country's leading diet delivery program that offers fresh, gourmet meals delivered directly to your door.

Gourmet Daily's menu is based on a balanced nutritional formula that is proven to promote healthy weight loss and increase energy levels.

For more information, visit gourmetdaily.com or call 800-265-6170.
Corpse Flower: Stinker Opens for Third Time in Five Years

By Samantha Mathewson / Aug 25, 2015 12:06 PM EDT
For the third time in just five years, a rare plant being grown in Binghamton University’s E.W. Heier Teaching Greenhouse is preparing to bloom. The Amorphophallus titanium (corpse flower) is known to the university as Metis, and when it decides to open, it will release a very stinky odor.

"It is clear from its tremendous growth rate that Metis favors this particular spot in the Tropical Room," Laurie Bell, greenhouse manager at Binghamton University, said in a news release. "After its last inflorescence in 2013, Metis’ corm weighed 50 lbs. It was then in leaf for a year, and nearly doubled its size to 95 lbs. this spring."

That’s one heavy, smelly plant. Corpse flowers generally only bloom once every 5-30 years, during which a scent reminiscent of decomposing flesh is given off. However, the university witnessed Metis’ first bloom in 2010, and then again in 2013. This year, it is expected to bloom around Aug. 26, according to the university’s release.

According to the news release, the university received Metis through the efforts of alumnus Werner Stiegler, who organized the donation of the bulb-shaped plant corm to the E.W. Heier Teaching Greenhouse. This plant had been grown from seeds that came directly from Bali, Indonesia. Stiegler named the plant "Metis," after the Titan goddess of wisdom in early Greek mythology, in order to keep up with a university tradition.

According the university’s news release, the greenhouse will offer extended hours for visitors, staying open from 8:30 a.m to 6 p.m. until flowering day, when the greenhouse will be open until 10 p.m.

A live stream of Metis can also be found online.
A review of three new children’s books

By Liz Rosenberg

GLOBE CORRESPONDENT | AUGUST 22, 2015

Dory, star of the well-loved “Dory Fantasmagory” (an American Library Association Notable Book and Golden Kite Honor Book for Fiction), is about to start school. “[Y]ou can’t talk to yourself at school,” her brother, Luke, reminds her. Her sister is even clearer: “the most important thing for you to remember is, DON’T BE YOURSELF. Can you do that?”

Dory, of course, being Dory, can’t not be herself — thank heavens. She’s cut from the same cloth as fictional heroines like Ramona the Pest and Junie B. Jones. She’ll want her invisible friend, Mary, with her, and she’ll still play scary Mrs. Gobble Cracker.

Still, she’d like a “real true friend.” When she meets the perfect princess classmate Rosabelle, things look unpromising. Rosabelle wears her princess clothes to school and draws princesses in her spare time. She’s popular and pretty, and Dory’s brother and sister are pretty sure she’s imaginary, too. But it turns out Rosabelle has a few tricks up her own puffed sleeves.

The pleasure of Abby Hanlon’s work lies in her pitch-perfect ear for the way kids really think, talk, and act. While Dory sits through show and tell, for instance, she’s “imagining that all the kids on the rug are newborn hamsters.” There are cartoony drawings scattered throughout “Dory and the Real True Friend,” making it almost a Wimpy Kid-style book for the younger set. And irrepressible Dory is as likable a kid heroine as I’ve encountered in a decade. My guess is we’re in for more books about Dory — and I’m all in for all of them.

Michael Pollan’s New York Times bestseller, “The Omnivore’s Dilemma,” changed the food-buying and eating habits of a generation. It’s hard to think of a more important, groundbreaking work about American nutrition. And of course “the secrets behind what you eat,” as the books cover says, are of vital importance to our young people, who suffer more from obesity and food-related illnesses than any previous generation. A Young Reader’s Edition of “The Omnivore’s Dilemma” was a brilliant idea. Best of all, I’m happy to
report, nothing essential has been lost from the original — not the clarity of thought, not the sparkling wit, the elegant prose — in short, it has mostly been trimmed and tightened, something many an adult book could use. I’d be very surprised if this edition didn’t appeal as much to adult readers as to younger ones.

In Pollan’s brief preface, he considers how his book might be used by kids: “encouraging their parents to shop differently — to buy organic or local food, for example.” He points out that some of his young readers have become vegetarian after reading his work, while others have chosen to be “a conscious carnivore.”

His aim, he explains, was not to preach either way, but “to give you the information you need to make good choices.”

“The Omnivore’s Dilemma” gives a vast amount of useful information about the food we eat — the prevalence of corn products; the issue of eating food flown in offseason and from great distances; the benefits of growing, buying, and eating local (“When chickens get to live like chickens, they’ll taste like chickens too”). Pollan makes his larger points by telling pointed, even personal stories. He keeps his wits and his sense of humor about him. And at times, as when he hunts and shoots his first game, he can break your heart.

The young reader’s edition contains sidebars and illustrations and goofy chapter headings to make the book more kid-friendly. In the afterword Pollan writes, “I suspect that reading this book will complicate your eating life.” In my own experience, Pollan’s advice has simplified and clarified my eating life. I try to eat more locally grown food, to prepare more of my own meals from scratch, and to avoid foods with loads of ingredients I can’t pronounce. It’s never too early to be aware of making good choices — “The Omnivore’s Dilemma” will set many young readers on the path toward better eating, and better living.

Former American poet laureate Robert Pinsky has a poem — perhaps his best-known poem — called “Shirt” that ends, “The shape,/The label, the labor, the color, the shade. The shirt.” The poem forces us to think for a moment about the shirt we wear on our backs, unconscious of everything that’s gone into its making. “Where Did My Clothes Come From?” takes us on a similar journey, though this one does it by way of the picture book — which is, come to think of it, a kind of visual and distilled form of poetry.

Author Chris Butterworth focuses on a few key items in a typical child’s wardrobe: blue jeans, wool sweater, party dress, soccer uniform, fleece jacket, rubber boots. Butterworth’s text is crisp and clear: “Synthetic fibers start as a mixture of chemicals that make a kind of sticky syrup. Inside a machine, this
syrup is squeezed through tiny holes into thin strands that harden into fibers.”

And, as in many good scientifically based children’s books, there are moments that become lyrical as well: “Silk can be made into different kinds of cloth: floaty silk, shiny satin, soft taffeta, or rich velvet.”

Author and illustrator in “Where Did My Clothes Come From?” work a little like straight man and comic — with Butterworth giving us the facts as plainly as possible, and illustrator Lucia Gaggiotti dancing images all around the words, adding a bright, happy energy to the book. There’s an almost Asian quality to many of these pictures, and a slightly retro feel to them as well, since Gaggiotti uses the kind of color palette popular in the 1950s and early ’60s, with lots of pale pinks, lemon yellows, and geometric shapes. The result is a particularly lively nonfiction book that not only gives a child a great deal of information, but also a sense of how worldwide the business of clothing really is. There’s a full double-page spread dedicated to “Recycling Facts” and a handy index at the back. Elementary school teachers will love this book; so will young fashionistas with a sense of curiosity.

Liz Rosenberg teaches English at Binghamton University and is the author, most recently, of “The Moonlight Palace.”
Bioengineer reveals the biggest challenge to 3D printing organs

Aug. 2, 2015, 11:12 AM

Researchers at Binghamton University are working on a 3D printing process that will allow them to build tissues and organs in a lab. This could save lives as people who need an organ transplant would no longer have to wait for a suitable match to be found.

Video courtesy of Binghamton University and Andrew Hatling.

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Lessons From Charles Darwin on Promoting Philanthropy

By David Sloan Wilson

It’s a jungle out there for nonprofits. Like an organism, a nonprofit must acquire resources to stay alive and accomplish its mission. It must carve out a niche in a crowded ecosystem of other organizations. Every year witnesses the birth of new groups and the death of old ones. To stay alive, a nonprofit must adapt to its ever-changing environment at a dizzying pace.

Most readers can probably grasp the Darwinian imagery in that description. But many might be surprised to learn that evolutionary thinking can do more than just describe biological processes. It can also provide insights into the human condition to help philanthropic leaders accomplish their missions.

In fact, based on my research and experience running my own nonprofit, I can offer a policy prescription to help solve a range of social problems, from dysfunctional families to dysfunctional governments, from blighted neighborhoods to degraded global environments.

Before I reveal what that is, let me say a word about evolution. Philanthropic organizations need to think of themselves as inhabiting a Darwinian world more deeply than they have before. What does that mean? It does not mean we are controlled entirely by our genes or that human social life is invariably "red in tooth and claw."
These are old presumptions that color the term "Social Darwinism" to this day. The modern ecological and evolutionary perspective is kinder and gentler, linked to philanthropy through a concept known as "prosociality," which is defined as any attitude, behavior, or institution that is oriented toward the welfare of others or society as a whole. Insofar as philanthropy means "love of humanity," philanthropic organizations are prosocial by definition.

A great deal of scientific research shows that people who inhabit highly prosocial environments have multiple assets, while those in environments with low prosociality have multiple deficits. But if prosociality is so good, why is it not more common? This is where evolutionary thinking becomes useful.

Natural selection is relentlessly comparative. It doesn’t matter how well an individual survives and reproduces, only that it does so better than other individuals in the vicinity. A group composed of highly prosocial individuals might function well over all, but the members who care more about themselves than about the broader welfare will capture more than their fair share of the benefits. Natural selection perversely favors such people, even if the group collapses as a result.

But this is only half of the evolutionary story. Natural selection consists of competition among groups as well as among individuals. And groups with a high number of prosocial members have a robust advantage over those that do not. The simple logic behind that explains an impressive range of biological phenomena, some of which stray into philanthropic territory.

Consider animal welfare. Suppose that you want to increase egg-laying productivity and you select the most productive hen from either a flock or a cage to breed the next generation of hens.

This experiment has been done, and it perversely leads to a decrease in egg productivity. How can this be? The most productive hen in each cage or flock is one that achieves success by beating up on the other hens; in other words, she has low prosociality. These aggressive traits are heritable, and selecting them results in groups of psychopaths that pluck each other’s feathers and murder each other. No wonder their egg productivity goes down and their suffering goes up!
The smart strategy, the one followed by the poultry industry, is to use the hens from the most productive flocks or cages to breed the next generation of hens — between-group selection, not within-group selection — resulting in hens that are both productive and nice to each other.

Once after I gave a lecture that included the chicken example, a woman rushed up to me and exclaimed: "That chicken example describes my department! I have names for those psychopathic chickens!" Evidently, her department had a policy of rewarding its members for their personal accomplishments, selecting for individuals who ignored all the cooperative activities required to maintain a good department.

This illustrates another key concept that links philanthropy to evolutionary thinking: The Darwinian contest is not just about genes; it is also a contest of culturally derived traits throughout human history — of traits that develop over an individual’s lifetime and of social strategies employed by behaviorally flexible individuals on a moment-by-moment basis, either consciously or unconsciously.

Let’s take a real-world example. I manage an effort called the Binghamton Neighborhood Project, which has mapped out small geographical variations in prosociality in my home city. In some neighborhoods, most of the residents are high in that characteristic, in others most are them are low. If you drop a stamped and addressed envelope on the sidewalk in one of the "high-prosociality" neighborhoods, for example, someone is likely to pick it up and mail it. If you drop it in one of the "low-prosociality" neighborhoods, it is likely that no one will bother.

Not all differences are geographically based. Our research has demonstrated that other social environments play a key role as well — that is, families, schools, churches, and extracurricular activities, in addition to neighborhoods.

What happens if you are a person who cares deeply about social welfare and you are surrounded by others who don’t? You would have four options: 1) leave; 2) try to convert your social partners; 3) defensively turn off your own prosociality; or 4) remain as you are and suffer the consequences. This is a contest not of genes but of social strategies.
Many people with low prosociality got that way because they chose the third option, like snails that have wisely withdrawn into their shells. They can return to caring about the broader welfare, but only if they are provided with a safer and more secure social environment.

In one natural experiment, we conducted the same survey measuring the prosociality of Binghamton public-school students at three-year intervals. A sizable fraction of students who took the survey both times had moved within the city limits. We were able to show statistically that the level of prosociality of a new neighborhood rubbed off on them.

In a much stronger test, we created a school for at-risk high-school students that richly rewarded prosocial behavior. We worked to create a social environment that offered, for example, a strong group identity and sense of purpose, student involvement in decision-making, fast and fair conflict-resolution procedures, teaching methods that offered short-term rewards for long-term learning outcomes, and an atmosphere of safety and playfulness. Such principles are needed for most cooperative enterprises but are lacking in many schools.

The result: Students who had flunked three or more courses during their previous year blossomed within the first quarter and for the rest of the year. Not only did they greatly outperform a comparison group in a randomized, controlled trial, but they even performed on a par with the average high-school student in Binghamton on the state-mandated exams. Their non-academic well-being improved as well, including their confidence in themselves and their family support.

So getting back to my policy prescription: Social problems are perversely adaptive in the evolutionary sense of the word—like psychopathic chickens. We need to change the social environments that select for the problem behaviors or the behaviors will be difficult or impossible to change. It is even unethical to counsel someone to become more prosocial when this would expose that person to harm.
If we do change the social environment in the right way, then people might well start caring more about society’s welfare without needing to be told. The challenges of finding "the right way" might be formidable, but a sophisticated knowledge of modern ecological and evolutionary science can only help, especially when nongenetic evolutionary processes are taken into account. To be effective philanthropists, we must become wise managers of evolutionary processes.

**David Sloan Wilson** is president of the **Evolution Institute** and SUNY Distinguished Professor of Biology and Anthropology at **Binghamton University**. His most recent book, **Does Altruism Exist? Culture, Genes, and the Welfare of Others**, was published by **Yale University Press and Templeton Press** in 2015.
For much of its history, the United States treated its military veterans pretty poorly.

Soldiers in the Continental Army were near open revolt in 1783 because their pay was late and their pensions weren’t being funded as they were supposed to be. Only a visit from George Washington prevented a mutiny.

The “Bonus Army,” a collection of jobless and destitute World War I veterans, descended on Washington in 1932 during the Great Depression, seeking early payment of bonuses they had been promised for their service. Congress voted down the request, and Army troops commanded by Gen. Douglas MacArthur attacked and burned their camp.

The country’s attitude toward veterans reflected the widely held belief that military service was an obligation, says Stephen Ortiz, a historian at Binghamton University. The nation would provide payments to war widows and assistance for veterans who lost limbs, but there was little thought to helping veterans reintegrate into the civilian world.
“Patriotism which is bought and paid for is not patriotism,” President Calvin Coolidge said in 1924 when he vetoed the original legislation to supply bonuses to World War I veterans. (Congress overrode his veto. The legislation promised that bonuses would be paid no earlier than 1945. The Bonus Army of 1932 was seeking immediate payment.)

That attitude changed with passage of the GI Bill during World War II. The legislation provided millions of veterans with free education, job training and loans for homes, farms and businesses. Looking back on the legislation from today’s perspective, it’s easy to underestimate just how revolutionary the bill was.

“Arguably it’s the most successful social legislation in American history,” says Ortiz, who has written extensively about veterans issues.

As World War II was still being fought, lawmakers began worrying about how to reintegrate millions of Americans back into the workforce when the war ended. For the first time, the country was considering going beyond meager veterans pensions and payments to widows.

The legislation’s official name — the Servicemen’s Readjustment Act — reflected its far-reaching ambition.

Boosting the postwar economy was one aim of the legislation, but it wasn’t the only one. The country’s leaders were worried about the social and political impact of millions of veterans returning to the United States after having gone through intense combat in Europe and the Pacific.

“There were palpable concerns about veterans and their return and what it meant for American society,” Ortiz says.

It was controversial when first introduced. Fiscal conservatives considered it a government handout. Elite universities worried that the influx of millions of veterans would lower standards.

But the bill had strong support from newly powerful veterans groups, particularly the American Legion, which helped draft the legislation and lobbied on its behalf. It was signed into law on June 22, 1944, a couple weeks after American GIs stormed the beaches of Normandy.

Americans were also more accustomed to an expanding role of the federal government after the New Deal and years of all-out war.

The impact of the legislation went beyond what its supporters imagined. It not only helped veterans rejoin civilian society, but also profoundly changed that society. It boosted the economy, fueled a housing boom and supercharged the American workforce.
The media and the public have been buzzing about the bizarre case of Rachel Dolezal, the former head of the Spokane, Washington, chapter of the National Association for the Advancement of Colored People, who says she identifies as black despite being born white.

In a "Today" show interview that aired yesterday (June 16), Dolezal hinted at a mismatch between her appearance and how she saw herself from a young age.

"I was drawing self-portraits with the brown crayon instead of the peach crayon, and black, curly hair," Dolezal said in the interview.

But just how common is it for people to have such discord between internal and external definitions of their race and ethnicity?

While many people feel some internal tension regarding their race or ethnicity, especially during adolescence, the lengths Dolezal went to in order to cover up her birth race are incredibly unusual, experts said.
"Kids will take on hip-hop culture or Latino culture based on their neighborhood, the schools, their community composition — but it's not something that would be lasting, because it wouldn't be reinforced" by people around them, said Anita Thomas, a health and psychology researcher at Loyola University Chicago who studies racial and ethnic identity.

Race vs. ethnicity

Ethnicity is a complicated mix of customs, traditions and behaviors that are rooted in heritage, Thomas said. Most people get cues about their ethnicity from family, society and the media. And most people don't identify with all of the canonical traits ascribed to a given ethnicity, such as enjoying spicy food or having a close-knit extended family, Thomas said.

Though ethnic identity is often confused with racial identity, the two concepts are very different, said John Cheng, a historian of comparative racial and ethnic studies at Binghamton University in New York.

In the 19th and early 20th centuries, scientists believed "a race was the equivalent of a subspecies, so that it had meaningful biological utility. But no scientist has believed that since the 1950s," Cheng told Live Science.

In fact, race has no biological meaning, several experts said. Populations with different ancestry may have different prevalence of certain genes, including the relatively small number that produce traits stereotypically associated with a race, such as silky black hair in Asian people. But that handful of genes is just the tip of the iceberg, with many more genes that are invisible to bystanders showing up at different rates in populations of different ancestry. For instance, certain genes associated with heart failure risk are more common in African Americans, but society doesn't consider those genes a sign of being black.

There are no black or Asian genes that define someone's race, said David Freund, a historian at the University of Maryland in College Park, who studies the history of racial "science," conflict and identity.

"Race and ethnicity are both 100 percent invented by modern societies," Freund told Live Science. [The Best Genealogy Software for Tracing Your Family Tree]

Just because race is constructed by society, however, doesn't mean its real-life consequences are nil or that race is malleable, he added. Race is a hierarchical system of classifying people based on four or five visible characteristics — such as skin color and hair texture — in order to confer certain privileges to one group and to disempower and discriminate against another, Freund said. And crucially, society plays a big part in defining race; few people have the option of choosing their racial identity, he added.
Racial mismatch

People commonly feel some discord between their internal and external ethnic or racial identity. For instance, expatriates may acquire some of the cultural habits of the local people, Thomas said.

And children who are surrounded by people of other ethnicities and races may "try on" different ways of dressing, eating or acting, but if the people around them don't encourage it, they mostly "grow out of it," Thomas said.

Many children who are adopted by parents of a race different from their own continue to feel an ethnic or racial difference from their families, and instead identify more closely with their birth race or ethnicity, Thomas said.

"A lot of the research on transracial adoption — and particularly with international Asian adoptees — really talks about the fluidity of ethnicity," Thomas told Live Science. "But most of the adoptees would say, 'I always knew I was Korean; I always knew I was Chinese.'"

Passing as black

Historically, African Americans who were light-skinned may have passed as white, to escape oppression or even, as in the case of the early NAACP leader, Walter White, to infiltrate white supremacist groups to get information on their plans for lynchings or other terrorist acts, Cheng said. Given the oppression faced by people identified as black, that's understandable to most people, Cheng said.

But Dolezal's case is counterintuitive because she is "passing" in the opposite direction. She appears to have much darker skin, wears traditionally African American hairstyles, and has identified as black and biracial in a few situations, according to news reports.

"This case is really unusual — and actually, to be honest, really quite weird," Freund said. Clearly, her identity as black seems to be deeply held, as she could have just said she was white but supportive of African American causes and made the controversy go away, Thomas said.

"But it's so much of how she sees herself that that disconnect can't be bridged for her," Thomas said.

Either way, the deception is problematic because most people don't get to choose their race, Freund said. Dolezal is probably benefiting from her African American identity without having experienced a lifetime of racism, and she can shed her black persona if it becomes inconvenient, Freund said. "She can hide in her whiteness at any moment if she wants to," Freund said.
Research into the ways in which men and women recover from breakups differently, conducted by Craig Morris, a research associate in the Department of Anthropology, was featured in several high-profile publications, including The Washington Post, Cosmopolitan, Men’s Health, Yahoo Health, MTV, Bustle, Glamour, MSN, The Huffington Post, Yahoo!News and more. Circulation: Over 1.31 billion.

Sarah Laszlo, assistant professor of psychology and linguistics, and Zhanpeng Jin, assistant professor of electrical and computer engineering, were recognized for their research outlining how our brains react to words in several high-profile publications, including The Huffington Post, The New York Daily News, Fast Company, Scientific American, Wire, CNBC and more. Circulation: Over 905.2 million.

Since 2005, Scott Craver, associate professor and undergraduate director for electrical and computer engineering, has been running Underhanded C, a competition in which entrants attempt to camouflage the best-hidden, most devious vulnerabilities into the most elegant-looking source code in the programming language. His contest was featured in Yahoo! Sports! Yahoo! News UK and The Christian Science Monitor. Circulation: Over 34.8 million.

A recent study about women and depression and a new test, which claims to identify people at risk of depression, conducted by Brandon Gibb, professor of psychology and director of the Mood Disorders Center at Binghamton University, was featured in several high-profile publications, including The Huffington Post, MSN.com and Marie Claire. Circulation: Over 98 million.

Gibb also found that a relatively simple eye test is able to predict a child’s higher risk of later developing depression. His work was featured in several news publications, including Yahoo! Parenting, MSN.com, Business Insider, United Press International. Circulation: Over 729.2 million.

An inexpensive, bacteria-powered battery made from paper and developed by Seokheum “Sean” Choi, assistant professor of electrical and computer engineering, was featured in Newsweek, PBS, and MSN. Circulation: Over 775.2 million.
Research into the world’s first murder by Rolf Quam, assistant professor of anthropology, was picked up by over 100 media sources, including National Public Radio, Nature World News, The Huffington Post, The New York Times, The Washington Post and The New York Daily News. Quam’s research regarding lethal wounds found on a human skull may indicate one of the first cases of murder in human history — some 430,000 years ago — and offers evidence of the earliest funerary practices in the archaeological record. Circulation: Over 672.3 million.

Mary Muscari, associate professor for the Decker School of Nursing, offered her insight on the strange paradox that is emerging in America: Overall violent-crime rates are down, but active shooter events – in which a person is trying to kill multiple people in a populated area – appear to be on the rise, according to Federal Bureau of Investigation statistics. The story was picked up by several news media sources, including Yahoo! News, Yahoo! News Canada and LiveScience. Circulation: Over 40.2 million.

Binghamton University was name one of the 25 Healthiest Colleges in the U.S. by MSN.com. This article discusses how health and wellness have become a top priority though the B-Healthy initiative launched in 2013 and the BU Acres Farm on campus, which produces sustainable, locally grown produce. Binghamton has also become one of 20 colleges in the U.S. to join Partnership for a Healthier America’s campus initiative. Circulation: Over 335.6 million.

A new study, conducted by researchers at Binghamton University, Washington State University, and the University of Washington, revealed a possible connection between high-fat diets and overeating. The study was featured in MSN.com (Money) and Yahoo! Finance. Circulation: Over 380.4 million.

Binghamton’s corpse flower, Metis, bloomed for the third time in just five years. The news was featured in The Irish Times, Nature World News and New Scientist. Circulation: Over 10.2 million.


Kaiming Ye, professor of anthropology, and his team, are working on a 3D printing process that could save lives by allowing them to build tissues and organs in a lab. Their research was featured in Business Insider. Circulation: Over 23 million.

David Sloan Wilson, president of the Evolution Institute and SUNY Distinguished Professor of Biology and Anthropology at Binghamton University was recognized for his research about lessons from Charles Darwin on promoting philanthropy. His research was featured in The Chronicle of Philanthropy. Circulation: Over 226,000.

Stephen Ortiz, Binghamton University historian, was recognized for his talks about how the country’s attitude toward veterans reflected the widely held belief that military service was an obligation. His research was featured in USA Today. Circulation: Over 39.5 million.
Binghamton University anthropologist **Rolf Quam**, undergraduate director and assistant professor for anthropology, along with a large team of international researchers, were recognized for their research on the body size and shape in the human fossil collection from the site of the Sima de los Huesos in the Sierra de Atapuerca in northern Spain. Their research was featured in *Archaeology* magazine. Circulation: Over 809,628, including digital.

**Howard Brown**, Napoleonic historian at Binghamton University, was featured on National Public Radio for his research on the Battle of Waterloo. Circulation: Over 13 million listeners.

**John Cheng**, historian of comparative racial and ethnic studies at Binghamton University, who believes that ethnic and racial identity are very different, was featured in Yahoo!News.com. Circulation: Over 60 million.

The research of **David Sloan Wilson**, professor of anthropology and behavioral sciences at Binghamton University and a persistent advocate for group selection, was featured in several high-profile publications, such as *The Wall Street Journal* and *The New York Times*. Circulation: Over 173.4 million.

**Seth Spain** and his colleague Peter Harms turned their analytic skills on the Transformers, the popular Japanese-American toys, comic books, animation and movie character that can turn themselves from robots into vehicles and other types of machines. Their research was featured in *Inc*. Circulation: Over 4.2 M million

Binghamton University alum **Stephanie Courtney**, better known as Progressive Insurance’s “Flo,” delivered a speech at the University’s Spring 2015 commencement ceremony. The article highlighting Courtney’s speech was featured in *The Huffington Post, USA Today* and CNN. Circulation: Over 176.1 million.
4 Surprisingly Valuable Leadership Lessons You Can Learn From the Transformers

New research shows leaders can glean real wisdom from Optimus Prime and Megatron.

BY MINDA ZETLIN / Co-author, 'The Geek Gap' @MindaZetlin

Can toys and cartoon characters really make you a better leader? Surprisingly, the answer is yes.

That's the word from Seth M. Spain, assistant professor of organizational behavior at Binghamton University. He and his colleague Peter Harms have turned their analytic skills on the Transformers, the popular Japanese-American toys, comic books, animation, and movie characters that can turn themselves from robots into vehicles and other types of machines. Spain and Harms found that the lessons in their character descriptions are full of wisdom about what makes a great leader.

Why study the Transformers in the first place? For one thing, Spain explains, each toy comes with both a rank and a rating of the character's abilities, which makes it easier to compare them to each other. Also, "Peter knew I was a general-purpose mid-30s nerd and the Transformers would be something I'd be interested in."
The two put together a database of each Transformer characters using the toys' rankings and "my painfully extensive knowledge of the cartoon series," Spain says. They published their findings in a Psychology Today blog post titled "What Would Optimus Prime Do?" In it, they make the argument that emulating the leader of the Autobots (the good Transformers) really can improve your leadership skills.

"What was most surprising—given this is a toy and cartoon series for fairly small children—was how representative the findings were of what we know about leadership from regular academic study," Spain says. Here's a look at some of the wisdom you can glean from the Transformers:

1. Don't have too many bosses.
Leaderless, flat, and more democratic organization structures are getting lots of attention these days—mostly because they work surprisingly well and sometimes outpace the competition. That's because removing management layers and the high salaries that go with them allows such companies to run leaner and more efficiently.

Same goes for Transformers. "The Autobots have a flatter, less hierarchical, more equal organization," Spain says. "Whereas the Decepticons [evil Transformers] are more vertical, with a despot ruling by fiat."

2. Be very smart.
"The most important quality for Transformer leaders is intelligence," Spain says. "We looked at good guys and bad guys separately and the best predictor of rank was a high rating in intelligence."

That mirrors the real world. "The academic literature says that intellectual ability is a predictor of both leader emergence and leader effectiveness," Spain notes. "We're not necessarily talking book smarts or academic achievement," he adds. "It could be what used to be called a shrewd business sense. There's a certain swiftness of mind."

3. Know who you're leading.
"One of the main things we did was look at followership in the cartoon show," Spain says. "We broke it down into examples of both constructive and destructive followers. The Decepticons have really good examples of both excellent and really bad followers."

One outstanding example of a really bad follower is Starscream, a lieutenant in the Decepticons. "He's constantly plotting to overthrow the leader Megatron, but Megatron keeps him around for some reason, even though he often tells him he's not smart enough to be a leader." That strategy backfires in an early-animated episode when the Decepticons are about to defeat the Autobots until Starscream mucks things up with an assassination attempt against Megatron.

"On the other hand, Megatron has other followers who are extremely loyal and dependable," Spain notes. "One lesson from that is to be aware of your followers and what they're all about." That may be difficult for a leader such as Megatron, he adds.
"Classic Dark Triad leader may not be paying a lot of attention to their followers and may miss a lot of information," he says. "But even evil leaders need good followers if they're going to succeed." (Here's more on the Dark Triad and how a small dose of evil qualities can benefit every leader.)

4. Care about everyone.

Caring for others may be the most important attribute that sets Optimus Prime apart from Megatron. "Optimus Prime is constantly trying to make sure his followers are OK, and that human beings aren't harmed in the fights between robots," Spain notes. Compassion and integrity are vital traits for a leader, he adds.

That's really the central message of this research. "The sociological point we're trying to make is that narratives of all kinds can communicate norms and expectations about leadership," Spain says. "So holding up a popular example can be very useful."

In other words, try asking yourself 'What would Optimus Prime do?' It really can lead you to the best decision.
Here Are Some Of The Big Names Giving Commencement Addresses In 2015

The Huffington Post | By Tyler Kingkade
Posted: 04/28/2015 12:30 pm EDT Updated: 04/28/2015 12:59 pm EDT

It's almost May, which can only mean one thing: Commencement season is upon us.

Every year, colleges and universities book big name celebrities, businessmen and women, politicians and philanthropists for commencement addresses. It may be a way to garner publicity for the school, but as far as students are concerned, it's usually the most entertaining part of the sometimes-prolonged commencement ceremonies.

As we do each year, The Huffington Post will be bringing you extended coverage of the best commencement speeches. But for those who can't wait, or are curious at who is scheduled this year, we have lineup of some of the biggest names below.

**Stephanie Courtney, Better Known As Progressive Insurance's "Flo" - Binghamton University**
Women Win At Relationships — Beyoncé And Science Agree

As the Queen Bey once decreed, 'thought that I'd be weak without you, but I'm stronger.' By: Rachel Paoletta
Heartbreak is hard: you find yourself doing things you wouldn’t normally do, like scrolling through your ex’s Instagram late at night or crying openly in Whole Foods. But eventually, there comes a point where, like a phoenix, you rise from your fortress of empty Ben & Jerry’s pints and pull yourself back into rebound mode.

Who better to score your comeback soundtrack than Beyoncé, who once sang, “You thought that I’d be weak without you, but I’m stronger/You thought that I’d be broke without you, but I’m richer/You thought that I’d be sad without you, I laugh harder”? 

It turns out that Bey and science both agree that women recover from relationships better than men. According to Science Daily, Researchers at Binghamton University and University College London asked 5,705 participants in 96 countries to talk about their breakups, and found that while women experienced more pain in the aftermath, they also “recover[ed] more fully and [came] out emotionally stronger.”

But how do you even study the science of breakups? Basically, participants were asked to “rate the emotional and physical pain of a breakup on a scale of one (none) to 10 (unbearable), Science Daily reports. In terms of “emotional anguish,” women averaged 6.84 versus 6.58 in men, and “in terms of physical pain, women averaged 4.21 versus men’s 3.75.”

Maybe it’s the healing power of Ben & Jerry’s and Beyoncé (or biology...yeah, probably biology), but women eventually become stronger than ever after a breakup. Men, on the other hand, try to “move on” or “never fully recover.”

“The man will likely feel the loss deeply and for a very long period of time as it ’sinks in’ that he must ’start competing’ all over again to replace what he has lost — or worse still, come to the realization that the loss is irreplaceable,” Craig Morris, a research associate at Binghamton University said.
"Brainprints' Could Become The Password To Beat All Passwords

The Huffington Post UK  |  By Nitya Rajan

Posted: 03/06/2015 16:05 BST Updated: 03/06/2015 16:59 BST

Passwords have become a common cause of woe in our hyper connected world of multiple accounts and devices, partly because of our inability to remember them and predominantly because words can always be guessed.

When fingerprints and iris scanners came along most thought it was the ultimate form of failsafe security until a gang in Malaysia chopped off a man's finger to break into his car's security system.

Now scientists believe they have found the ultimate passwords: our brains.
Since they are fairly hard to access without permission and require zero effort to remember, brain waves could be the password to beat all passwords.

Researchers from Binghamton University, New York observed the way 45 people responded to acronyms and found that each person had a unique 'brainprint' that a computer could then use to identify specific individuals.

The findings were published in the journal Neurocomputing. Co-author Sarah Laszlo explained the significance of the results saying:

"If someone's fingerprint is stolen, that person can't just grow a new finger to replace the compromised fingerprint -- the fingerprint for that person is compromised forever. Fingerprints are 'non-cancellable.'

Brainprints, on the other hand, are potentially cancellable. So, in the unlikely event that attackers were actually able to steal a brainprint from an authorized user, the authorized user could then 'reset' their brainprint."

Since they are fairly hard to access without permission and require zero effort to remember, brain waves could be the password to beat all passwords.

Jin said: "We tend to see the applications of this system as being more along the lines of high-security physical locations, like the Pentagon or Air Force Labs, where there aren't that many users that are authorised to enter, and those users don't need to constantly be authorising the way that a consumer might need to authorise into their phone or computer."

Well, we can only hope that this doesn't stay true for long.
How developing and disguising software bugs can help cybersecurity

The decade-old Underhanded C competition rewards contestants who can camouflage the most malicious software vulnerability. And it’s meant to make all software more secure.

By Joe Uchill, Staff writer AUGUST 24, 2015

There's no question that software bugs are common. Typically, programs ship with at least one or two that researchers later find – or the public is surprised by. So, for a bug connoisseur such as Scott Craver truly extraordinary vulnerabilities are things to be prized.

Since 2005, Dr. Craver has been running Underhanded C, a competition in which entrants attempt to camouflage the best-hidden, most devious vulnerabilities into the most elegant looking source code in the programming language known as "C." This year’s challenge went live last weekend. The game is on.
Now, a decade after the first contest, Craver is introducing a new wrinkle. He’s partnering with the nonproliferation group the Nuclear Threat Initiative for a nuclear treaty-themed contest. While winners in previous years have essentially won bragging rights (and a gift card), this year’s pot will be $1,000, thanks to NTI.

Recommended: What the security industry can learn from the World Health Organization

"Our goal is to demonstrate how difficult it is to write secure software by showing off innocent looking code that misbehaves," said Craver, an associate professor in the Department of Electrical Engineering at Binghamton University.

He hopes that by encouraging people to think about how code might hide bugs (whether on purpose or accidentally), they will program code more securely and be better at auditing it. This year’s competition, he said, relates to a problem that has existed since the 1970s.

“How can you get two nations to jointly write a piece of software both people will trust to do something that is really trust critical: implementing the terms of the nuclear disarmament treaty,” Craver asked.

For NTI, "it’s a chance to increase awareness," said Page Stoutland, vice president of scientific and technical affairs for NTI. "We hope it will bring in a new set of experts.”

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The contest is one part of the organization's new effort to get security professionals more interested in the verification problems for experts dealing with nuclear diplomacy and verification.

Developing computer programs to assist in nuclear weapon verification programs or treaties that limit deployment is hardly theoretical. The 1978 “SALT II” treaty between Russia and the US, signed but never ratified by Congress, aimed to provably reduce the number of nuclear missiles without revealing their locations. To do this, a computer-based verification system was developed.

This year's contest, "Faking Fissile Material," will force contestants to create the kind of worst-case scenario that would keep verification engineers up at night. Contestants will be given gamma ray spectrum readings to check whether or not they are sufficiently similar to the fissile material used for nuclear weapons. And their programs are meant to work, until the "host country" somehow triggers the program to return a match even when there isn't one.

Traditionally, the Underhanded C contest has been connected to current events. The previous two, for example, involved National Security Agency surveillance of social networks. An earlier contest was tied to encryption. This year is no different – the US government has agreed to a controversial nuclear pact with Iran.
But not all of the malicious coding contests have been so globally-minded. The 2009 contest, “Losing my freakin’ luggage,” was a response to Craver’s experience with poor airline service. In that instance, the airline wasn’t able to check him into the first connection in a three-legged flight.

Developing truly diabolical code isn’t easy. Many entries are suspiciously long or convoluted for the relatively simple tasks the contest assigns. A program that compares data sets, such as the one in this year's contest, should never require much more than a 100 lines of code. Anything longer would raise a red flag. Craver says less than half the entries would fool him if he inspected the programs in the real world.

The best entries, Craver said, are the ones with plausible deniability – ones that could conceivably be explained as innocent mistakes. In the real world, high-stakes programs draw intense scrutiny and the most underhanded programmers prepare for the possibility of being caught.

His favorite example of an unintentional flaw that could have caused great harm is the so-called “Hursti Hack” of Diebold voting machines that was discovered by Harri Hursti in 2005.

When the machines reset, they checked to make sure zero votes had been cast. But the machines didn’t check if each of the candidates had zero votes – one candidate could start with 500 votes and another could start with negative 500 votes. The total would still be zero, but one candidate would have a 1,000-vote head start. If someone knew about the vulnerability, they could have used it to steal an election.

That's the kind of malice that Craver is trying to prevent by encouraging programmers to be more careful not to introduce security flaws into programs.

Beyond awarding points for how deniable or hidden a vulnerability is, Craver also gives points for irony – or, as he calls it, “spite.” He would love to see the vulnerability reside in an error checking function, for instance.

Programmers who have a knack for deception have until November 15 to submit. Full rules are available on the Underhanded C homepage.
Relapse is a common but troubling symptom of depression, with anywhere from 50 to 80 percent of people who experience one or more depressive episodes going on to experience another episode.

While the causes of relapse are often unclear, new research from Binghamton University, published last week in the journal Clinical Psychological Science, suggests that an attentional bias towards negative facial expressions may be one risk factor.

The first-of-its-kind study asked 60 women with a history of depression and 100 women with no history of depression to play a computer-based game. They were rapidly shown a series of paired images of faces – one with a neutral expression and the other with an angry, happy or sad expression – while researchers tracked their eye movements.

The researchers found that those with a past history of depression paid significantly more attention to the angry faces. Among the women with a history of depression, those who looked at the angry faces the most were at the greatest risk for developing depression again over the course of the study’s two-year follow-up period.

This suggests that attentional biases might be able to predict a person’s risk for depression relapse, according to researchers. The findings may also open up the possibility of new preventative treatments to help individuals with a history of depression reduce their tendency to focus on negative facial expressions.

"This is exciting because, although we know that depression is a debilitating and highly recurrent disorder, we do not have good tests to identify which people are at greatest risk for relapse," Dr. Brandon Gibb, director of the Mood Disorders Center at the university, who led the study with graduate student Mary Woody, told The Huffington Post in an email.
"We believe that this research is an important first step in identifying markers of future depression risk in people who are currently feeling fine."

Study participants were shown two images of faces for just 1 second, while researchers tracked their eye movements. [Credit: Radboud Faces Database]

"What we showed is if your attention is drawn to people who appear to be angry with you or critical of you, then you're at risk for depression," Gibb said in a statement.

It's easy to see how this test might be used to measure or predict anxiety, which involves an overactive brain response to negative or threatening stimuli. But why would it predict depression?

Well, it's likely that this attention bias indicates a heightened sensitivity to criticism and conflict, which is often a component of depression, especially in women, Gibb said.

"Responses to threatening stimuli are most commonly thought of in response to anxiety, not depression," Gibb told HuffPost. "However, interpersonal theories of depression emphasize the role of interpersonal conflict and rejection."

The study did have some limitations -- it was conducted only on women because, as the researchers explained, they tend to be more reactive to interpersonal stress. It's not yet clear whether similar results might be observed in men.

However, the researchers said their work opens up some exciting new possibilities for diagnosing depression and preventing relapse. Scientists might be able to develop, for instance, computer-based games designed to help people with a history of depression to reduce their biases towards negative facial expressions and stimuli.

"These types of interventions have already shown great promise in the treatment of anxiety, and we are hoping that they can also be used for the treatment of depression," Gibb explained. "Our results suggest that a useful target of these interventions in preventing depression relapse is reducing individuals' tendency to have their attention get stuck on angry faces in their environment."
The paper battery, which is powered by bacteria, is folded using the Japanese art of origami to increase surface area and energy production. Seokheun (Sean) Choi

A new origami paper battery, which is powered by bacteria and costs five US cents, could revolutionise the diagnosis of diseases in developing and remote areas.

Researchers at Binghamton University in New York have developed the battery at a proof of concept level and are hoping it could be on the market for doctors and medics within three years.

The battery is made from standard office paper with a nickel-based cathode on one side and carbon paint anode on the other. The team used the ancient Japanese art of origami, or paper-folding, to fold the battery down to the size of a matchbox.
Bacteria from a single drop of dirty water are fed into the battery where their respiration could potentially generate microwatts of energy - enough to power a paper-based biosensor used for diagnosing diseases.

Professor Seokheun Choi, an expert in bioelectronics at Binghamton University who led the research, told Newsweek: "I want my paper-based biobatteries to be used in resource-limited regions. Dirty water can be a source to derive [energy for] my battery to power other types of electronics, like paper-based biosensors."

The use of paper-based tools for disease diagnosis are growing in popularity due to their extremely cheap production costs and transportable nature. However, existing paper biosensors generally need external power sources or to be paired with sophisticated electronic devices.

Researchers at Florida Atlantic and Stanford universities recently developed paper and plastic strips costing less than $1, which could test for HIV. However, a smartphone camera was needed to capture the results and send them off for diagnosis.

Choi's ambition is to develop a fully paper-based biosensing system, which is powered by the paper battery and uses paper substrates to test for and detect diseases, without the need for smartphones or other tools. He has received a $300,000 (€267,000) grant from the US government's National Science Foundation to pursue his research.

He hopes this development could revolutionise healthcare in developing countries, providing quick and cheap disease diagnosis and potentially saving thousands of lives. Diagnosis can be prohibitively expensive at present. Tests for the Ebola virus, which killed more than 10,000 people in West Africa in a recent outbreak, can cost up to $100 (€89) and take hours to produce a result.

The use of origami was a novel idea proposed by Choi, who says the ancient folding techniques allows several batteries to be linked together efficiently and a greater power output to be generated. The battery is unfolded when in use, increasing its surface area exponentially and thereby increasing the energy produced by the resiping bacteria.

"One individual battery is not enough to power the external applications, so we needed to connect several batteries in series or in parallel to increase power. Stacking several batteries is not efficient, so I brought these origami technologies to [the research]. By folding the papers, we can stack them very efficiently," he says.
World’s Oldest Murder Case Uncovered in Spain’s ‘Pit of the Bones’

Call it "CSI: Prehistory." Scientists have uncovered what may be the world's oldest murder case. The victim was bashed in the head -- twice -- and then tossed into a pit deep inside a cave system in Spain. And it happened 430,000 years ago, during the Middle Pleistocene era.

Here’s a look at the evidence, examined by a team of researchers led by paleontologist Nohemi Sala of Madrid's Centro Mixto UCM-ISCIII de Evolucion y Comportamiento Humano.
As seen in the image, there are two cracks in the skull above the left eye. “Either one of them could have been lethal because they would have penetrated the brain,” paleoanthropologist Rolf M. Quam of Binghamton University told The New York Times. “The fact that there were two fractures seems to imply an intention to kill.”

Indeed, the scientific abstract published in PLoS ONE reads more like a coroner’s report:

"The type of injuries, their location, the strong similarity of the fractures in shape and size, and the different orientations and implied trajectories of the two fractures suggest they were produced with the same object in face-to-face interpersonal conflict.

Given that either of the two traumatic events was likely lethal, the presence of multiple blows implies an intention to kill. This finding shows that the lethal interpersonal violence is an ancient human behavior and has important implications for the accumulation of bodies at the site, supporting an anthropic origin."
In other words, we humans have been killing each other for a very long time.

"This represents the earliest clear case of deliberate, lethal interpersonal aggression in the hominin fossil record," the research team wrote.

The skull of the victim, a young adult of unknown gender, was found in 52 pieces and then put back together by the research team. Using modern forensic techniques, including contour and trajectory analysis, the team determined that the fractures were made by two separate blows from the same object, each with a slightly different trajectory, according to a news release.

Sala told Reuters that the murder weapon was likely a wooden spear, stone spear tip or stone hand axe. The researchers are still missing a motive, but that might be a little tougher to determine.

"Unfortunately, the intentions do not fossilize so it is impossible to interpret the motivation of the killing," Sala told the news agency. "Not even Sherlock Holmes could help us in that."

The skull was among 28 sets of remains discovered in Spain in what’s known as Sima de los Huesos or the "Pit of the Bones." The pit lies inside a cave system in the Atapuerca Mountains and at the bottom of a shaft more than 40 feet deep.

Scientists believe the ancient murder victim was dead on arrival as falling accidentally might cause one crack in the skull but not two nearly identical fractures. Since the victim didn't fall, the body must've been dumped there.

"The only possible manner by which a deceased individual could have arrived at the SH site is if its cadaver were dropped down the shaft by other hominins," the researchers wrote.

That would make it the earliest known example of funerary behavior in the human fossil record in addition to being the world's oldest crime scene.
Why America Is Prone to Mass Shootings

A strange paradox is emerging in America: Overall violent-crime rates are down, but active shooter events — in which a person is trying to kill multiple people in a populated area — appear to be on the rise, according to Federal Bureau of Investigation statistics.

Meanwhile, a just-released study finds that although the United States has just about 5 percent of the world's population, the country has 31 percent of the world's mass shooters. The reasons for these numbers are complex, researchers say, but the data suggest that the availability of guns, and perhaps the American obsession with fame, may be to blame.

The United States has more private gun ownership and more desire for fame than any other country in the world, said Adam Lankford, a criminal justice professor at the University of Alabama and author of the new research, presented Sunday (Aug. 23) at the annual meeting of the American Sociological Association. [5 Milestones in Gun Control History]

The possible association between mass shootings and a desire for fame is particularly eerie, given the nation's latest high-profile killing. Early this morning (Aug. 26), a former employee at a local news station in Virginia allegedly killed a reporter and a cameraman on-air, while filming the shooting with a GoPro camera. He later posted the film to social media. Because there were fewer than four victims, the event does not qualify as a mass shooting, according to most definitions. But the apparent desire to broadcast the crime places the killer in the same company as many notorious mass shooters of the past decade. [The History of Human Aggression]

"Especially some of the younger ones — they want attention," said Mary Muscari, a forensic nurse at Binghamton University in New York who has studied revenge-driven mass killers. "That's why you see them wanting to have a bigger head count, a bigger body count, to try to outdo the last one or to do something that is going to cause more of a rise."