

Here are the winners of the 2020 Ig Nobel Prizes to make you laugh, then think

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The 30th First Annual Ig Nobel Prize Ceremony: introducing 10 new Ig Nobel Prize winners, each of whom has done something that makes people laugh, then think.

Ah, science, tirelessly striving to answer such burning questions as what alligators sound like when they breathe in helium-enriched air and whether knives fashioned out of frozen feces constitute a viable cutting tool. These and other unusual research topics were honored tonight in a virtual ceremony—thanks to the ongoing pandemic—to announce the 2020 recipients of the annual Ig Nobel Prizes. You can watch the livestream of the awards ceremony above.

Established in 1991, the Ig Nobels are a good-natured parody of the Nobel Prizes that honors “achievements that first make people laugh, and then make them think.” The unapologetically campy award ceremony usually features mini-operas, scientific demos, and the 24/7 lectures whereby experts must explain their work twice: once in 24 seconds, and the second in just seven words. Acceptance speeches are limited to 60 seconds. And as the motto implies, the research being honored might seem ridiculous at first glance, but that doesn’t mean it is

devoid of scientific merit. Traditionally, the winners also give public talks in Boston the day after the awards ceremony; this year, the talks will be given as webcasts a few weeks from now.

The winners receive eternal Ig Nobel fame and a 10-trillion dollar bill from Zimbabwe. It's a long-running Ig Nobel gag. Zimbabwe stopped using its native currency in 2009 because of skyrocketing inflation and hyperinflation; at its nadir, the 100-trillion dollar bill was roughly the equivalent of 40 cents US. (Last year, the Reserve Bank of Zimbabwe introduced the "zollar" as a potential replacement.) The 2009 Ig Nobel Prize for Mathematics was awarded to the then-head of the RBZ, Gideon Gono, "for giving people a simple, everyday way to cope with a wide range of numbers—from very small to very big—by having his bank print bank notes with denominations ranging from one cent (\$.01) to one hundred trillion dollars (\$100,000,000,000,000)."

ACOUSTICS

Citation: "Stephan Reber, Takeshi Nishimura, Judith Janisch, Mark Robertson, and Tecumseh Fitch, for inducing a female Chinese alligator to bellow in an airtight chamber filled with helium-enriched air."

Crocodiles, alligators, and similar non-avian reptiles are extremely vocal and prone to bellowing loudly, especially during mating season. The honorees were curious as to whether these vocalizations might be a means of advertising body size (it's been shown that females prefer to mate with males who are larger than they are). To test this hypothesis, the researchers "recruited" an adult Chinese alligator at Florida's St. Augustine Alligator Farm Zoological Park who had been quarantined in a rectangular plastic tub following a medical procedure. The alligator was known to bellow frequently, usually responding to the 40 American alligators bellowing in a nearby enclosure. The researchers were thus

able to get her to bellow on cue by playing back recorded bellows, under two conditions: while breathing normal air, or air mixed with helium.

The intent was a not to make the poor alligator perform a popular party trick. The authors explained that this was a good way to see if the creatures demonstrated vocal-tract resonances (technically known as formant frequencies), which are used by mammals and birds as an indicator of body size. And indeed, the authors did conclude that there was evidence of vocal-tract resonances in their female alligator. Furthermore, "Because birds and crocodilians share a common ancestor with all dinosaurs, a better understanding of their vocal production systems may also provide insight into the communication of extinct Archosaurians," the authors wrote in their 2015 paper.

PSYCHOLOGY

Citation: "Miranda Giacomin and Nicholas Rule, for devising a method to identify narcissists by examining their eyebrows."

Among psychologists, grandiose narcissism is a "dark" personality trait, marked by selfishness, egotism, entitlement, and vanity. Although such individuals are often superficially charming, some people can spot a narcissist almost at first glance—a valuable social skill that enables them to avoid getting snared in a narcissist's toxic web. Giacomin and Rule wanted to pinpoint the mechanism behind this skill. Prior research showed that a person's face is one of the first things we notice when meeting someone new, so they recruited 39 undergraduates to pose for photographs with neutral expressions and then had them fill out the Narcissistic Personality Inventory.

Giacomin and Rule then used those photographs for a series of studies in which participants were asked to rate each of the faces in terms of how narcissistic they thought they were.

Eyebrows are among the most expressive features of the face, and the researchers found that people rely on eyebrows to accurately pick out grandiose narcissists—specifically, based on the distinctiveness of their eyebrows. I guess the lesson here is to beware of people with distinctive, well-groomed eyebrows.

PEACE

Citation: “The governments of India and Pakistan, for having their diplomats surreptitiously ring each other’s doorbells in the middle of the night, and then run away before anyone had a chance to answer the door.”

Relations between India and Pakistan have long been tense, but things got particularly ugly in 2018, with more than 434 ceasefire violations at the border in Kashmir in just the first two months of the year. Further worsening relations, it seems the foreign ministries in both countries also engaged in targeted harassment of senior diplomats from their rival countries. That included cutting off power and water supplies, tailing diplomats in their vehicles, obscene phone calls, aggressive confrontations, and, indeed, ringing diplomats’ doorbells in the wee hours of the morning and then running away. I’m not sure what’s worse: that supposed professional government representatives behaved like petty schoolchildren or that one retired Indian diplomat told the Guardian that such harassment was “neither new nor unusual”—and not limited to India-Pakistan relations.

PHYSICS

Citation: “Ivan Maksymov and Andriy Pototsky, for determining, experimentally, what happens to the shape of a living earthworm when one vibrates the earthworm at high frequency.”

Vibrate a pool of water and you’ll find that, above a critical frequency, a pattern of standing waves will form on the surface. These are known as Faraday waves after Michael

Faraday, who studied the phenomenon in the early half of the 19th century. Maksymov and Pototsky reasoned that, since many living organisms are mostly made of liquid, which they deem akin to liquid drops, organisms should experience standing waves under the right conditions. The researchers chose earthworms for their experiments because they “have a hydrostatic skeleton with a flexible skin and a liquid-filled body cavity.” Earthworms are also cheap, and you don’t need ethics approval to use them. The worms were immobilized with ethanol and placed atop a thin Teflon plate that was then vertically vibrated. The researchers used laser vibrometry to detect the vibrations in the living earthworms. And sure enough, the duo recorded a critical transition to Faraday waves.

In the tradition of the infamous “spherical cow,” Maksymov and Pototsky modeled the wormy bodies as “an elastic cylindrical shell filled with fluid” for the theoretical portion of the research. The paper also includes this gem of an observation: “Large vibrations were also avoided because they additionally lead to ejection of a sticky fluid from the worm.” I don’t even want to know more. The project wasn’t done for giggles, however. The authors contend that their results “could be used to develop new techniques for probing and controlling biophysical processes [like the propagation of nerve impulses] inside a living body.”

ECONOMICS

Citation: “Christopher Watkins, Juan David Leongómez, Jeanne Bovet, Agnieszka Żelaźniewicz, Max Korbmacher, Marco Antônio Corrêa Varella, Ana Maria Fernandez, Danielle Wagstaff, and Samuela Bolgan, for trying to quantify the relationship between different countries’ national income inequality and the average amount of mouth-to-mouth kissing.”

These honorees were keen to examine cultural differences in “romantic mouth-to-mouth kissing” to see if the behavior might

be a means of maintaining long-term pair bonds, among other advantages. So they recruited 3,109 participants from around the world (spanning 13 countries and six continents) for an online study. They found that kissing was typically rated as more important in later phases of a romantic relationship, particularly for the younger participants. And as they had hypothesized, income inequality was positively related to kissing frequency in their results. "Individuals kiss their partner more in countries where resource competition is likely to be more intense, which may play an important role in maintaining long-term stable pair bonds in certain types of harsh environments," the authors concluded. We'll stick with the time-honored wisdom that a kiss is still a kiss.

MANAGEMENT

Citation: "(□□□) Xi Guang-An, (□□□) Mo Tian-Xiang, (□□□) Yang Kang-Sheng, (□□□) Yang Guang-Sheng, and (□□□) Ling Xian Si, five professional hitmen in Guangxi, China, who managed a contract for a hit job (a murder performed for money) in the following way: After accepting payment to perform the murder, Xi Guang-An then instead subcontracted the task to Mo Tian-Xiang, who then instead subcontracted the task to Yang Kang-Sheng, who then instead subcontracted the task to Yang Guang-Sheng, who then instead subcontracted the task to Ling Xian-Si, with each subsequently enlisted hitman receiving a smaller percentage of the fee, and nobody actually performing a murder."

Yep, this really happened, and it all started over a real estate business dispute. The assassination target, a man named Wei, had filed a civil lawsuit against two real estate companies. One of the investors in those companies, Tan Youhui, hired Xi Guang-An to find someone to kill Wei. Mo Tian-Xiang was promised 2 million yuan, an amount that had been reduced to a mere 100,000 yuan by the time Ling Xian-Si was subcontracted to do the deed. Ling Xian-Si decided this wasn't enough to be worth the risk, and contacted Wei instead.

The two men met at a coffee shop, and Lin Xian-Si convinced Wei to pose for a photograph, bound and gagged, and then “disappear” for 10 days. Apparently the plan was to collect the 100,000 yuan payoff without committing the crime, but eventually the entire plot came to light. All the defendants received prison sentences last year, ranging from three years and six months (for Xi Guang-An), to two years and seven months (for Ling Xian-Si).

ENTOMOLOGY

Citation: “Richard Vetter, for collecting evidence that many entomologists (scientists who study insects) are afraid of spiders, which are not insects.”

OK, let’s be fair here: it’s amusing, but Vetter *does* know the difference, since he notes in his 2013 paper that two of the 41 entomologists who participated in his study were collection managers, “and regardless of the diversity of insects they process, they still have a different reaction to spiders than insects.” And he later distinguishes between spiders and arthropods. It’s just that he found the prevalence of arachnophobia among entomologists surprising, given that they work so closely with creatures many non-entomologists find equally repulsive, and he wanted to learn more about what might be causing the aversion. This study is worth reading for all the colorful personal details alone. My personal favorite fell into the category of negative childhood encounters with spiders: one person “had a recurring nightmare (from age 4 to 8) of running around her house into the large web of a human-sized spider and waking up just before being eaten.” I feel you, nameless entomologist.

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