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You confused scientific jargon so are

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But it's pervasive in academia, and now a team of researchers has analyzed jargon in a set of over 21,000 scientific manuscripts. They found that papers containing higher proportions of jargon in their titles and abstracts were cited less frequently by other researchers. Science communication — with the public but also among scientists — suffers when a research paper is packed with too much specialized terminology, the team concluded. [caption id="attachment_9523821" align="alignnone" width="1280"] They found that papers containing higher proportions of jargon in their titles and abstracts were cited less frequently by other researchers.[/caption] These results were published Wednesday in Proceedings of the Royal Society B. Jargon can be a problem, but it also serves a purpose, said Hillary Shulman, a communications scientist at Ohio State University. "As our ideas become more refined, it makes sense that our concepts do too." This language-within-a-language can be a timesaver, a way to precisely convey meaning, she said. However, it also runs the risk of starkly reminding people — even some well-educated researchers — that they aren't "in the know." "It's alienating," said Shulman. Two scientists recently investigated how the use of jargon affects a manuscript's likelihood of being cited in other scientific journal articles. Such citations are an acknowledgment of a study's importance and relevance, and they're used to estimate a researcher's productivity. Alejandro Martínez, an evolutionary biologist, and Stefano Mammola, an ecologist, both at the National Research Council in Pallanza, Italy, started by collecting scientific papers. Using the Web of Science, an online platform that allows subscribers to access databases of scholarly publications, they zeroed in on 21,486 manuscripts focused on cave research. Cave science is a particularly jargon-heavy field, Martínez said. That's because it attracts a diverse pool of researchers, each of whom brings their own terminology. Anthropologists, geologists, zoologists and ecologists all end up meeting in caves, he said. "They like the rocks or the bugs or the human remains or the wall paintings." To compile a list of cave-related jargon words, Martínez combed over the glossaries of caving books and review studies. He settled on roughly 1,500 terms (including the four that appear at the beginning of this article). Mammola then wrote a computer program to calculate the proportion of jargon words in each manuscript's title and abstract. Papers with a higher fraction of jargon received fewer citations, the researchers found. And none of the most highly cited papers — with more than 450 citations — used jargon in their title, while almost all had abstracts where fewer than one percent of the words were jargon. As citations are often viewed as a metric of academic success, jargon has a negative effect on a paper, Martínez and Mammola propose. Fewer citations can mean that a paper isn't getting read and remembered, which is bad news for science communication overall, the team concluded. Other researchers have found, however, that using less-common words — a form of jargon — can be beneficial. David Markowitz, a psychology of language researcher at the University of Oregon, analyzed the abstracts of nearly 20,000 proposals for funding from the National Science Foundation. His results, published in 2019, revealed that abstracts that contained fewer common words tended to garner more grant funding. "Jargon doesn't always associate with negative outcomes," Markowitz said. But clear communication should always be a goal in science, said Sabine Stanley, a planetary scientist at Johns Hopkins University. "It's important to step back and always remind yourself as a scientist: how do I describe what I'm doing to someone who is not doing this 24/7 like I am?" Stanley recently participated in the Up-Goer Five Challenge at the annual meeting of the American Geophysical Union. Inspired by an xkcd comic explaining the Saturn V rocket in plain language by Randall Munroe (an occasional New York Times contributor), the event challenges participants to communicate their science using only the thousand most-common words in the English language (a text editor is available). "It's quite challenging," said Stanley, who presented new results from the Mars InSight lander. The title of her talk? "A Space Computer Named In Sight Landed on the Red World Last Year and Here Is What We Found So Far." Katherine Kornei c.2021 The New York Times CompanySubscribe Writer, editor, communications advisor and writing coach. You and your organization will benefit from clear, persuasive communications. Let's have a conversation. 4y A team of researchers who analyzed jargon in over 21,000 scientific manuscripts found that papers containing higher proportions of jargon in their titles and abstracts were cited less frequently by other researchers. Science communication — with the public but also among scientists — suffers when a research paper is packed with too much specialized terminology, the team concluded. It also runs the risk of starkly reminding people — even some well-educated researchers — that they aren't "in the know." It's alienating, said one scientist. To view or add a comment, sign in A. Bajrami, PhD, Researcher, University of Tirana, Albania, EuroScitizen WG4 Member F. Bilak, Project Manager at Le Cercle FSER, France, EuroScitizen WG5 member A. Bilbao, Researcher R. Branquinho, PhD, Researcher and Science Manager, University of Porto – Faculty of Arts and Humanities, Portugal, EuroScitizen WG4 Member E. Butkeviciene, PhD, Researcher, Kaunas University of Technology H.D. Dufour, PhD, Director, Le Cercle FSER, France, EuroScitizen WG5 leader R.M. Dvorakova, PhD, Researcher, Charles University, Czech Republic, EuroScitizen WG1 and WG2 member V. Janstova, PhD, Researcher, Charles University, Czech Republic M.J. Fonseca, PhD, Head of Communication, Natural History and Science Museum of the University of Porto, Portugal M. Kapetanakis, Researcher L. Martinelli, PhD, Senior Researcher, MUSE – Science museum, Trento, Italy, EuroScitizen WG3&5 member L. Mecklenburg, PhD candidate, Freie Universität Berlin, Germany F. Miri, PhD, Researcher, University of Tirana, Albania, EuroScitizen P. Pessoa, PhD student with an FCT grant, CIDTFF-University of Aveiro, University of Trás-os-Montes e Alto Douro, Portugal, EuroScitizen WG2 Member D. Radovčić, PhD, senior curator, Croatian Natural History Museum, Croatia, EuroScitizen WG3&5 member G. Realdon, PhD, independent researcher, University of Camerino, Italy, EuroScitizen WG2 member M. Siani, PhD, Weizmann Institute of Science;Herzog College, Israel M. Varga, PhD, Associate Professor, ELTE Eötvös Loránd University, Hungary; EuroScitizen WG4&5 member Ö. Yahyaoğlu, PhD candidate, Akdeniz University, Turkey, EuroScitizen WG5 Member I. Yruela, PhD, Research scientist at Estación Experimental de Aula Dei-CSIC, Spain; EuroScitizen WG1,4&5 Member Are you confused by scientific jargon? So are scientistsPolje, nappe, vuggy, psammite. Some scientists who study caves might not bat an eye, but for the rest of us, these terms might as well be ancient Greek.Specialised terminology is pervasive in academia, and now a team of researchers has analysed jargon in a set of over 21,000 scientific manuscripts. They found that papers containing higher proportions of jargon in their titles and abstracts were cited less frequently by other researchers. Science communication – with the public but also among scientists – suffers when a research paper is packed with too much specialised terminology, the team concludes.These results were published recently in Proceedings of the Royal Society B.Jargon can be a problem, but it also serves a purpose, says Hillary Shulman, a communications scientist at Ohio State University. "As our ideas become more refined, it makes sense that our concepts do too." This language-within-a-language can be a timesaver, a way to precisely convey meaning, she says. However, it also runs the risk of starkly reminding people – even some well-educated researchers – that they aren't "in the know.""It's alienating," says Shulman.Two scientists recently investigated how the use of jargon affects a manuscript's likelihood of being cited in other scientific journal articles. 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David Markowitz, psychology of language researcher at the University of Oregon, analysed the abstracts of nearly 20,000 proposals for funding from the National Science Foundation. His results, published in 2019, reveal that abstracts that contain fewer common words tended to garner more grant funding. "Jargon doesn't always associate with negative outcomes," Markowitz says.– Katherine KorneiGood news for people who have to suffer for their ice cream (Katharina Zimmermann)The mysterious molecular culprit behind cold tooth painThere's nothing quite like the peculiar, bone-jarring reaction of a damaged tooth exposed to something cold: a bite of ice cream, or a cold drink, and suddenly, that sharp, searing feeling, like a needle piercing a nerve.Researchers have known for years that this phenomenon results from damage to the tooth's protective outer layer. But just how the message goes from the outside of your tooth to the nerves within it has been difficult to uncover. Biologists reported recently in the journal Science Advances that they have identified an unexpected player in this painful sensation: a protein embedded in the surface of cells inside the teeth. The discovery provides a glimpse of the connection between the outer world and the interior of a tooth, and could one day help guide the development of treatments for tooth pain.More than a decade ago, Dr Katharina Zimmerman, now a professor at Friedrich-Alexander University in Germany, discovered that cells producing a protein called TRPC5 were sensitive to cold. When things got chilly, TRPC5 popped open to form a channel, allowing ions to flow across the cell's membrane.Ion channels like TRPC5 are sprinkled throughout our bodies, Zimmerman says. It occurred to her that "the most sensitive tissue in the human body can be teeth" when it comes to cold sensations.Within the protective shell of their enamel, teeth are made of a hard substance called dentin that's threaded with tiny tunnels. At the heart of the dentin is the tooth's soft pulp, where nerve cells and cells called odontoblasts, which manufacture dentin, are intertwined.The picture that slowly assembled is that TRPC5 is active in the odontoblasts. That was a bit of a surprise, as these supporting cells are best known for making and maintaining dentin, not aiding in perception. Within the odontoblasts, TRPC5 pops open when the signal for cold comes down the dentin tunnels, and this results in a message being sent to the nerves, says co-author Dr Jochen Lennerz, a pathologist at Massachusetts General Hospital.As it happens, one substance that keeps TRPC5 from opening is eugenol, the main ingredient in oil of cloves, a traditional treatment for toothache. Though the Food and Drug Administration in the United States is equivocal about eugenol's effectiveness, if it does lessen the pain for some people, it may be because of its effect on TRPC5.– Veronique GreenwoodNot quite a rolling stone... (Joshua Malone)These rocks made a 1,000-mile trek. Did dinosaurs carry them?In the summer of 2017, Joshua Malone, then an undergraduate at Augustana College in Illinois, visited a field research camp in Wyoming and picked up some rocks. Rounded at the edges and the size of small fists, they were out of place amid the fine-grained mudrock that had surrounded them, and Malone asked his father, David Malone, a geologist at Illinois State University who led the dig at the site, if he knew where the rocks had come from.Four years later, the two have developed a surprising answer.In a study published earlier this year in the journal Terra Nova, the Malones say the stones came from a rock formation in southern Wisconsin about 1,000 miles to the east of where they were found. What's even more surprising is their hypothesis for how the rocks made that journey: the researchers say they were carried in the guts of long-neck dinosaurs.These animals, known as sauropods, reached lengths of over 100ft and weights of 40tns, and regularly swallowed stones known as gastroliths, perhaps to help them digest plants, just as some birds and reptiles do today. The hypothesis would explain how the rocks acquired their smooth and rounded textures. But questions remain about whether they really made the whole journey in the bellies of these great beasts.The gastroliths were found in Jurassic-aged mudstones in a rock formation called the Morrison. A rainbow of pinks and reds, the Morrison formation brims with dinosaur fossils, including those of sauropods, such as Barosaurus and Diplodocus, as well as meat-eaters like Allosaurus.But the rocks, which are similar to gastroliths dug up elsewhere, were found on their own without any dinosaur remnants. To get a clue as to how they had ended up in modern-day Wyoming, the team crushed the rocks to retrieve and date the zircon crystals contained inside, a bit like studying ancient fingerprints."What we found was that the zircon ages inside these gastroliths have distinct age spectra that matched what the ages were in the rocks in southern Wisconsin," says Malone, who's now a doctoral student studying geology at the University of Texas at Austin. "We used that to hypothesise that these rocks were ingested somewhere in southern Wisconsin and then transported to Wyoming in the belly of a dinosaur."He adds, "There hasn't really been a study like this before that suggests long-distance dinosaur migration using this technique, so it was a really exciting moment for us."– Lucas JoelThey're not quite as magical as you'd imagine however (iStock)The fairy circles mystery gets a new suspectIn the Australian outback, certain grasses grow in eerie rings, with ramparts of dusty green standing at the edge of wide circles of bare red dirt. Often described as "fairy circles", these rings of spinifex grass resemble structures first spotted in the Namibian desert, both creating enormous honeycomb patterns across the landscape that really pop out in aerial photos.A small study published last month in the Australian Journal of Botany suggests that microbes living in the soil may contribute to the rings' formation in Australia, rendering the dirt within the ring hostile to new seedlings and the dirt beyond the ring hospitable.Spinifex grasses start out as small round hummocks, says Angela Moles, an ecologist at the University of New South Wales and an author of the new paper. Then, as new seedlings sprout outward, the plants in the middle die, leading to the ring shape. Researchers have explored whether the bare inner soil becomes depleted of nutrients; whether it is too dry or compacted for new growth; and whether insects might be destroying the spinifex. But a consensus on what is driving the formation of rings has yet to emerge.Moles had heard of a small European swamp grass that grew in a ring pattern, a result of a buildup of soil pathogens in the middle. She and Neil Ross, a graduate student in her lab, were curious whether sterilising the soil from inside rings, thus killing any microbial organisms there, would make it easier for plants to grow in it. If so, that would imply that microbes were involved.Ross carefully scooped soil from the interior of rings in the desert of Australia's Northern Territory, and from outside the rings as well. Back at the university's greenhouses, he sterilised some of each. He then planted some spinifex seeds in pots of microbe-free soils and some in unaltered soils.The seeds germinated more easily in containers of interior soil that had been sterilised, the researchers found. About the same number of seeds germinated in soil from outside the rings that had not been sterilised, suggesting that outer soil and sterilised inner soil both encouraged new growth. Sterilising the inner soil seemed to remove whatever was keeping plants from sprouting.If new spinifex grasses can't handle the pathogens in the soil at the centre of their clump, they may sprout instead just outside of it, leading to that signature ring pattern.– Veronique Greenwood© The New York Times Has your data leaked on the dark web? Get your free dark web report now. × 144854900 story Posted by msmash on Friday April 09, 2021 @04:41PM from the closer-look dept. Scientific papers containing lots of specialized terminology are less likely to be cited by other researchers. The New York Times reports: Polje, nappe, vuggy, psammite. Some scientists who study caves might not bat an eye, but for the rest of us, these terms might as well be ancient Greek. Specialized terminology isn't unique to the ivory tower -- just ask a baker about torting or an arborist about bracts, for example. But it's pervasive in academia, and now a team of researchers has analyzed jargon in a set of over 21,000 scientific manuscripts. They found that papers containing higher proportions of jargon in their titles and abstracts were cited less frequently by other researchers. Science communication -- with the public but also among scientists -- suffers when a research paper is packed with too much specialized terminology, the team concluded. These results were published Wednesday in Proceedings of the Royal Society B. Jargon can be a problem, but it also serves a purpose, said Hillary Shulman, a communications scientist at Ohio State University. "As our ideas become more refined, it makes sense that our concepts do too." This language-within-a-language can be a timesaver, a way to precisely convey meaning, she said. However, it also runs the risk of starkly reminding people -- even some well-educated researchers -- that they aren't "in the know." "It's alienating," said Dr. Shulman. It turns out that this is often down to a quirk of history, and throws an illuminating light on the scientific process. When they first make their discoveries, scientists are often just scratching the surface. None the less, they have to give name to their findings that then get embedded in the culture. Meanwhile, the science progresses, but frequently, the name does not. Take "electricity" for example. When the earliest scientists, including Michael Faraday, were doing experiments, they did not fully understand electricity. So they reached for analogies like "current" and "flow" as if it were water. These words have stuck, and "it's no wonder people thought that electricity dripped out the sockets".Even when scientists are totally clear about their findings, they often borrow words from the vernacular, but give them a slightly different meaning in science. In quantum mechanics they talk about electrons having "spin". You would be forgiven for thinking of an electron going round in circles like a little ball, but sadly this is not the case. So instead of helping us by applying familiar words, the subtle differences just leave us more confused. Meanwhile, the term "uncertainty" seems to imply that scientists do not quite know what is going on, that everything is a bit dodgy. Actually, that is not what it means - "they know precisely in mathematical terms what is happening, but there is an aspect that is unknowable, in a very quantifiable way", says science writer Phil Ball. Perhaps the solution is to be found in "neologisms", where words are taken from somewhere totally different and given an entirely new meaning. When physicist David Mermin was looking for a name for a new super fluid, he turned to Lewis Carroll's nonsense poem "The Hunting of the Snark" and called it a Boojum. His motivation for doing so? "It was a joke! I wanted to see how silly a word I could get into the vocabulary of science," he explained. He succeeded, the word was accepted by the scientific community, and is there to be cherished - if not entirely understood - by the rest of us. "In the midst of the word he was trying to say,In the midst of his laughter and glee,He had softly and suddenly vanished away --For the Snark was a boojum, you see."BBC Radio 4's Calibrated Conundrums presented by Lynne Truss will be broadcast on Tuesday, 8 March 2011 at 1100GMT. Or catch up afterwards via iPlayer.