

Saturday Citations: Bronze-Age gender representation, gamma rays, nice bonobos in your neighborhood want to meet you

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Archaeologists excavated a Bronze Age stela that challenges longstanding interpretations of how the carvings represent gender and social roles in prehistoric times. Credit: Durham University

This week's news roundup includes a Bronze Age discovery that calls into question existing ideas of gender representation from the period. More research confirms that bonobos are actually nice. Plus: Actual good climate news?

Presumption challenged

It's simply a fact that when science writers use ellipses as extravagant drama dots, it's always with the phrase "... until now." Here's an example: Bronze Age relics can reveal a lot of information about the conditions and lifestyles of ancient people, but the lack of written records has inhibited specific knowledge about prehistoric social and gender roles... until now.

A multi-institutional team of archaeologists working in the 3,000-year-old funerary complex of Las Capellanías, in Cañaverale de León, in Spain, excavated a [funerary stela](#) depicting a human figure with a detailed face, hands and feet, a headdress, necklace, two swords and male genitals—the exact headstone I want after I die.

Prior to this find, stelas depicting headdresses and jewelry had been interpreted as depicting a female form, but the new find challenges these assumptions.

Tidings favorable

It's pretty easy to lapse into fatalism about [climate change](#) if your job entails reading an avalanche of research on a daily basis, so I have a tendency to latch onto any good news like a baby monkey clinging to a wire mother in a cruel behavioral experiment from the 1950s.

But this is legit optimistic news: Researchers from CNRS and CSIRO assembled the [first complete record of atmospheric carbon monoxide concentrations](#) over three millennia in the southern hemisphere and report that levels stabilized and may have started declining in the 1980s.

Levels climbed from their natural background level at the beginning of

the industrial revolution, rising to a peak in the early to mid-1980s, coinciding with the widespread deployment of catalytic converters in cars.

This is evidence that large-scale human efforts to mitigate the accumulation of pollutants in the atmosphere is effective, but catalytic converters also had a more immediate impact on climate: Carbon monoxide reduces the abundance of beneficial atmospheric hydroxyl, which removes other greenhouse gases from the atmosphere, including methane.

"Decreased levels of [carbon monoxide](#) take the pressure off hydroxyl, meaning it can scrub out gases like methane instead, so it indirectly mitigates methane and its impact on climate," says Dr. David Etheridge, a CSIRO atmospheric scientist.

Primates convivial

In the 19th century, plutocrats, the leading influencers, held that the dominance of humans over the earth was the inevitable outcome of natural selection resulting from a struggle in which only the fittest survive. If you mentioned evolutionary cooperation in which groups of organisms act together for mutual benefit, they'd call you a trade-union anarchist and then ride away on a smoke-belching steam engine.

Chimpanzees and bonobos, humanity's closest relatives, have wildly different approaches to interactions between social groups. While separate [social groups](#) of bonobos can come together cooperatively to share food and resources, interactions between groups of chimpanzees are better described as horrific carnage. According to a study led by Martin Surbeck of Harvard University, this all comes down to a matter of tolerance.

The research group [studied groups of bonobos](#) in the Kokolopori Bonobo Reserve in the Democratic Republic of Congo and found that bonobo group interactions don't occur randomly. A select few members of two groups preferentially interacted with cross-group members who were most likely to return the favor.

"Tracking and observing multiple groups of bonobos in Kokolopori, we're struck by the remarkable levels of tolerance between members of different groups. This tolerance paves the way for pro-social cooperative behaviors such as forming alliances and sharing food across groups, a stark contrast to what we see in chimpanzees," says Dr. Liran Samuni, the study's lead author.

Outburst immoderate

If you'd told me a week ago that it was possible for a [gamma-ray](#) burst to be so powerful that it could interact with the ionosphere, I'd have said "Wow, I totally believe you," because I'm pretty open-minded, like Mulder from "The X Files."

Scientists have speculated for years about whether such a strong burst is possible, and it turns out that last year's massive burst of gamma rays—nicknamed BOAT, for "brightest of all time"—[impacted the upper ionosphere](#) from 350 to 950 kilometers above the earth. It was detected by a Chinese-Italian satellite that monitors electric fields, and also activated lightning detectors and triggered sensors that detect solar flares.

BOAT originated 2 billion light-years away, but the really fun part of the article is the speculation about whether an equivalent outburst in our own galactic neighborhood could strip away the ozone layer and end life on earth as we know it.

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