



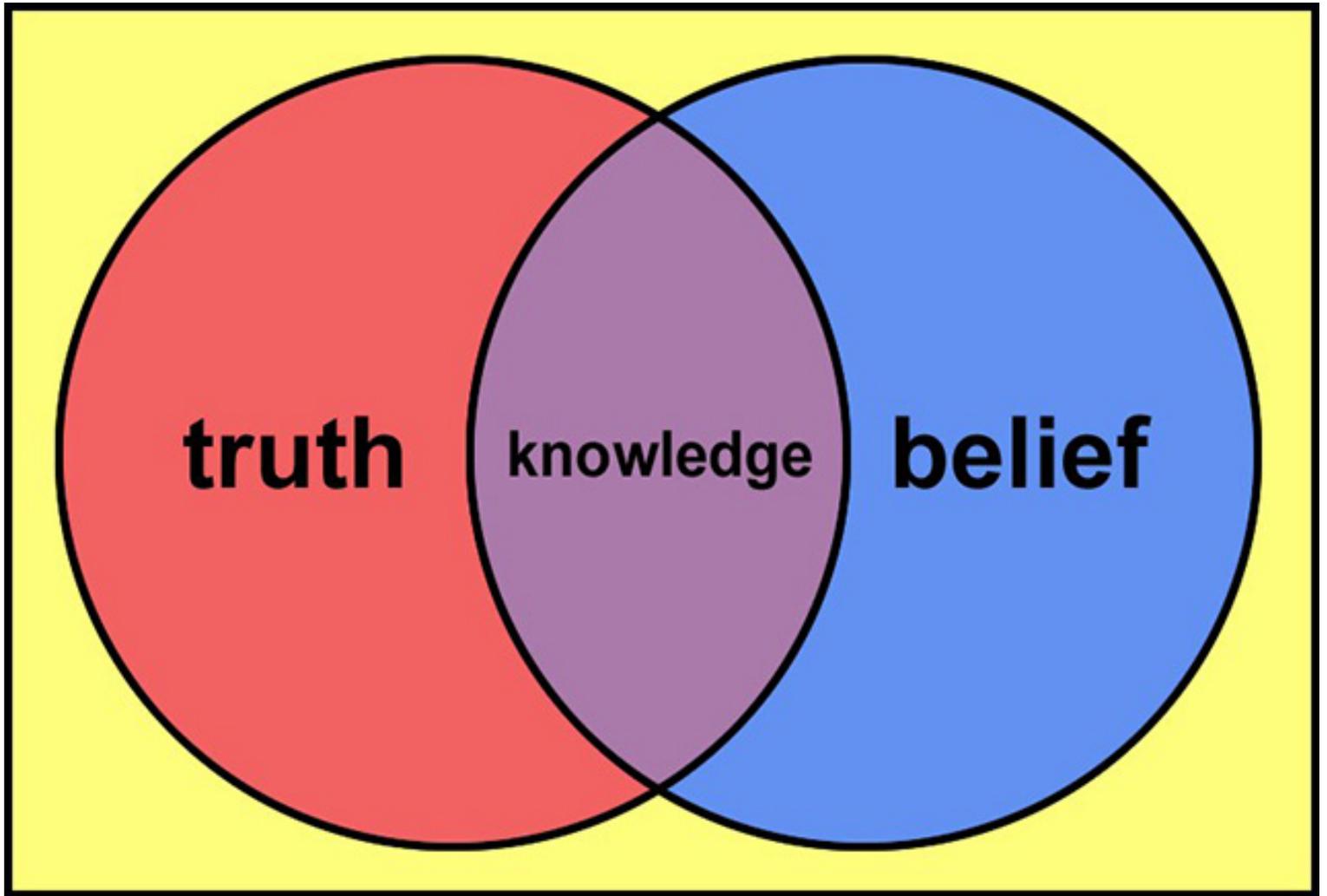
10 Thoughtful Things about Knowledge

Lisa Beebe, October 11, 2019

As part of UCLA's centennial celebration, the UCLA School of the Arts and Architecture is holding a series of conversations called [10 Questions: Centennial Edition](#). Every Tuesday evening for ten weeks, experts from diverse disciplines are exploring answers to some of life's biggest questions, including "What Is Justice?", "What Is Truth?" and "What Is Love?" The discussions, held at Kaufman Hall on UCLA's campus, are open to community members, free with [RSVP](#). Can't attend? We'll be sharing weekly highlights.

What is Knowledge? On October 8, philosopher and professor Tyler Burge, evolutionary biologist and podcaster Shane Campbell-Staton and theater artist Sylvan Oswald approached that question from different angles. Here are ten things we learned from the night's discussion.

1. **The study of knowledge is called “epistemology.”** (Use that word, and you’ll sound more knowledgeable than if you say “knowledge about knowledge.”)



Epistemology ven diagram depicting knowledge as the intersection of truth and belief.

2. **There are two main types of knowledge: Knowing how and knowing that.** Professor Burge said “knowing how” can be as basic as knowing how to tie your shoes or as sophisticated as knowing how to be sensitive to other people’s vulnerabilities. He cautioned that “knowing how to learn after you’re finished with your education, that’s an important skill.”

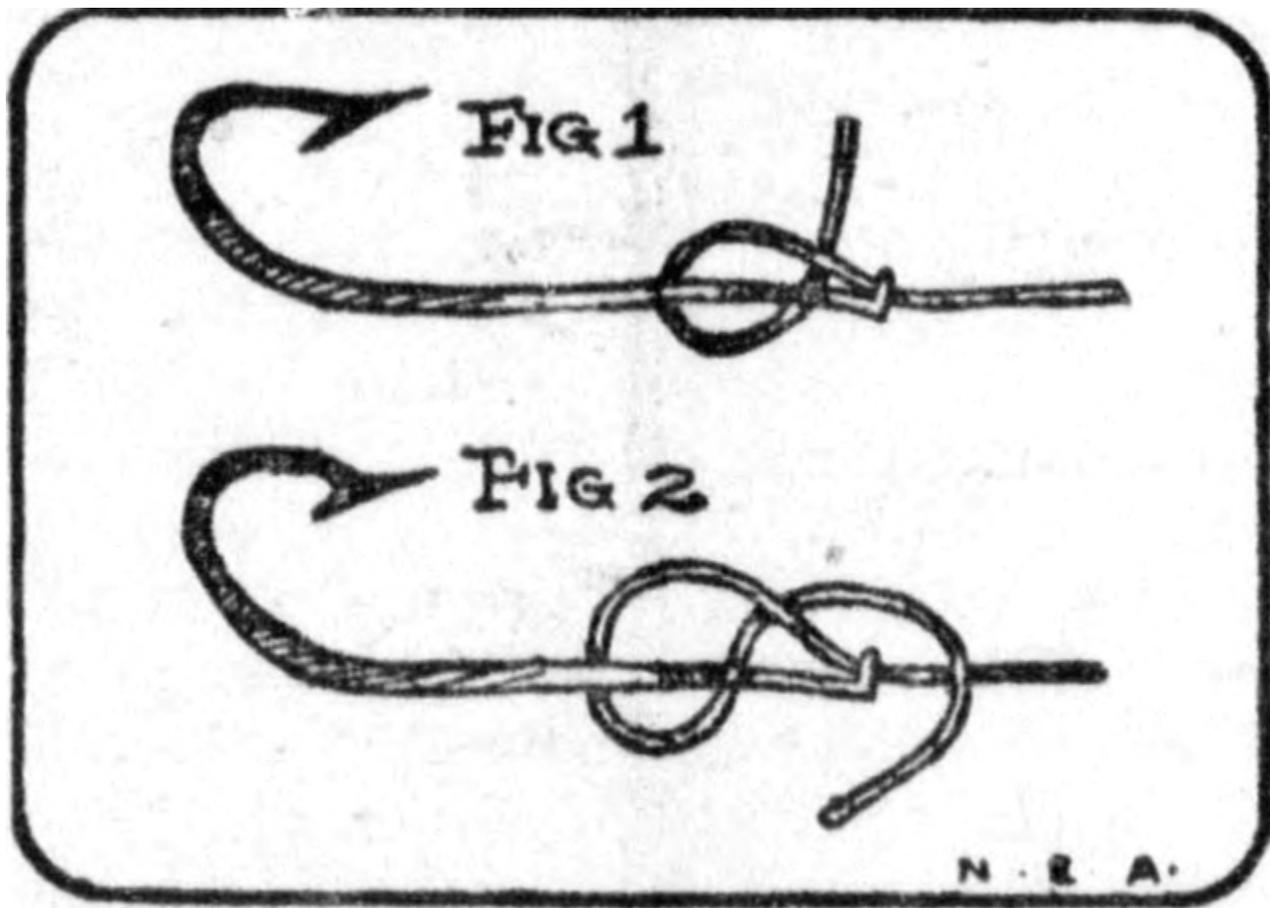


FIGURE EIGHT KNOT.

Diagram of a figure eight knot from [The Tacoma Times](#), May 14, 1904. Fishing can require a great amount of "know-how."

3. **"Knowing that" is more complicated.** Burge said it refers to "a true, justified, or warranted or supported belief, where the warrant or the support tracks the truth in the individual case." But what *is* truth? Find out at the "What Is Truth?" discussion on October 22.

$$ax^2 + bx + c$$

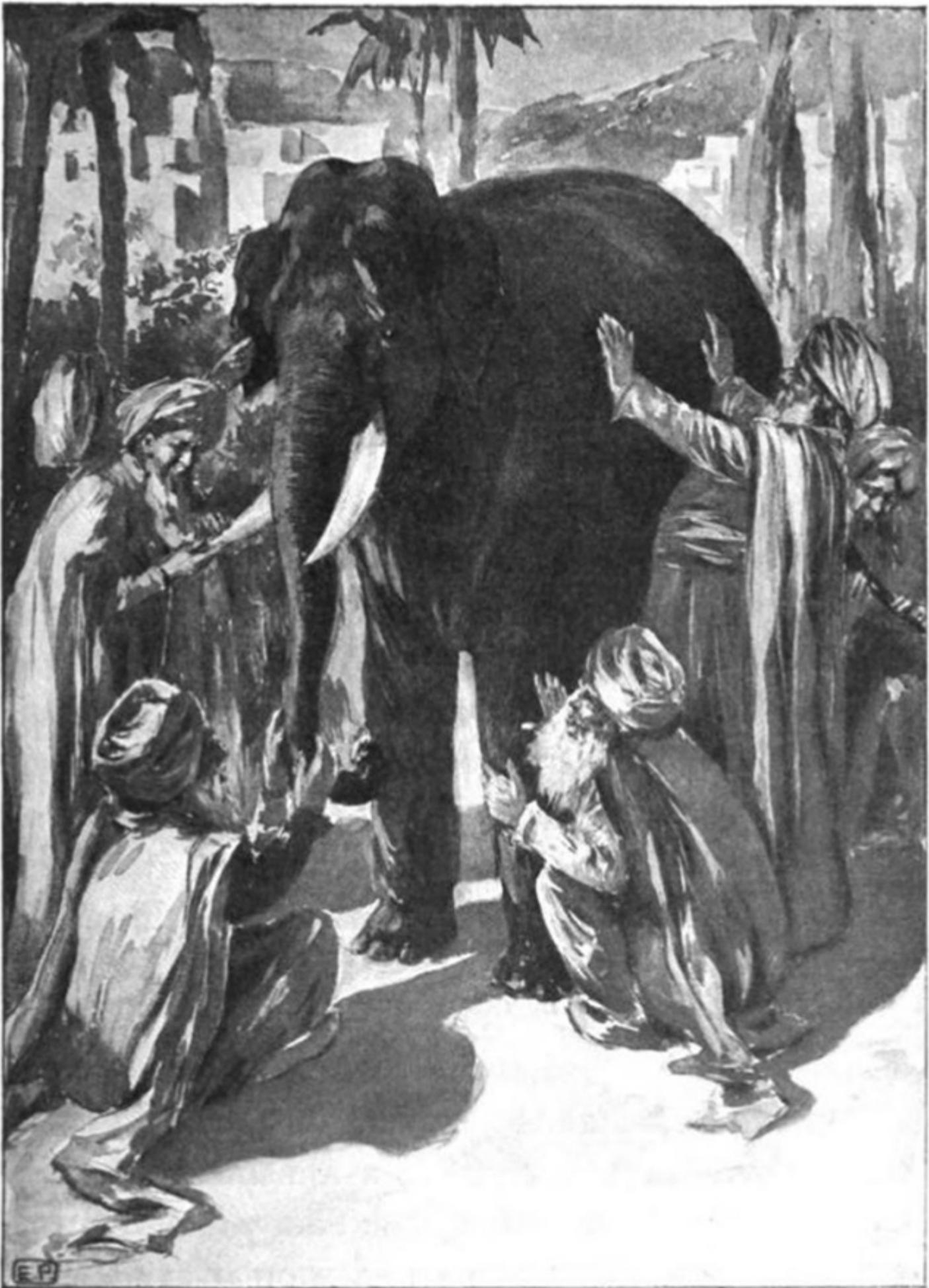
4. **Knowledge in science and knowledge in math is especially impressive, because it's systematic.** Burge said, "The system is held together by a kind of glue — the glue is explanation." Scientific knowledge comes from observing and repeating experiments, and mathematical knowledge is based on basic principles and proof.

5. **History is also a kind of knowledge that's based on observation, but with history, the observation can't be repeated** — unless somebody invents a time machine. Burge said, "We have evidence that comes from past events. It's a totality of evidence. We can keep finding more and more, of course, but ultimately a finite amount."



READ: [Carl Sagan Ponders Time Travel](#)

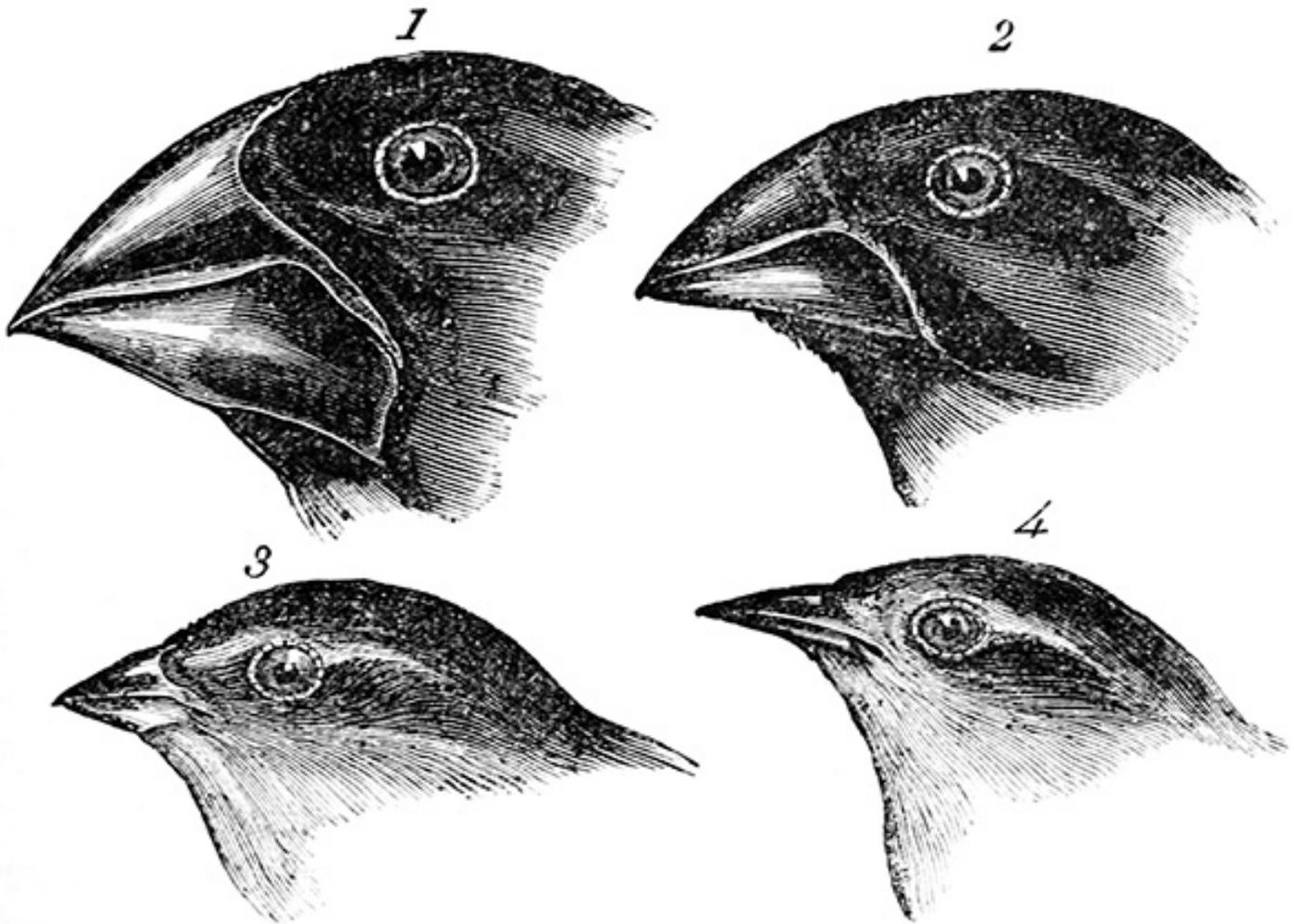
6. **Very little knowledge is certain.** Burge seemed 100% certain about that. He said that even for our finest scientific theories, "It's possible that some new evidence will come in that will make us realize that what we thought is true isn't."



The parable of [the blind men and the elephant](https://www.kcet.org/arts-entertainment/10-thoughtful-things-about-knowledge), the moral of which sheds light on the idea of absolute truth.

<https://www.kcet.org/arts-entertainment/10-thoughtful-things-about-knowledge>

7. **We can observe evolution in real time.** (But try not to stare.) Darwin believed that evolution was a slow, gradual process that takes thousands or millions of years, but Shane Campbell-Staton said we now know that's wrong. His work focuses on contemporary evolution and the effects of human activity on life all over the planet. He says, "One of the things that we're starting to understand is that not only does war impact the civilizations that fight those wars and those that may be innocent bystanders, but it also affects the wildlife that occupies the spaces in which those wars are fought." He explained how the ivory trade fueled arms purchasing during the Mozambican Civil War, leading to a dramatic increase in the percentage of elephants born without tusks in Mozambique.



1. *Geospiza magnirostris*.
3. *Geospiza parvula*.

2. *Geospiza fortis*.
4. *Certhidea olivacea*.

Galapagos Finches | Darwin, 1845

8. Scientists and engineers can pick up knowledge from nature. Campbell-Staton has a podcast [called The Biology of Superheroes](#). He talked about how when Spider-Man was bitten by a spider, he could've stopped there, "But he decided to go back into the lab and use his namesake, the spider, to come up with this web formula of his — and there are plenty of people all over the world, plenty of scientists that are using the materials that are made in the natural world, including spider silk, to engineer all sorts of materials for all sorts of different purposes.



[Learn how scientists and artists are using biomimicry to solve problems in engineering, design and sustainability.](#)

9. It's a big deal that humans can share knowledge with each other. Sylvan Oswald explained that this was a matter of life and death for cave dwellers, because they could warn each other about potential dangers. He said, "We share stories about what happens to us so that other people don't make the same mistakes." Campbell-Staton said we tend to take that for granted, and asked, "Can you imagine what life would be like if everything you learned you had to learn on your own?"

ANTRVM PLATONICVM



Maxima pars hominum cecis immergitur tenebris
 Volens attendit, et s' talia letatur inani.
 Absque ut istuc his obstitit in horat' umbras.
 Vt VERI simulacra omnes mentantur amant.



Et s' tollit' omnia ludantur imagine rerum
 Quam pauci meliore lato, qui in lumine puro
 Secreti à s' tollit' verba, ludibria ceruic
 Rerum umbras itaq; expendant omnia luce:



Hi postea erroris nebula dignoscere possunt
 Vera bona, atque alios cecis sub nocte latentes
 Extrahere in clarum lucem conantur, ut illis
 Nullus amor lucis, tanta est rationis egestas.

CC. Harlemensis Jov.
 Saenredam Sculpsit.
 Henr. Hondius excudit.
 1604.

H.L. SPIEGEL FIGVRARI ET SCVLPI CVRAVIT AC DOCTISS. ORNATISS. ZD PET. PAW IN LVGDVN. ACAD. PROFESSORI MEDICO DD.

Plato's [Allegory of the Cave](#) (depicted here by Jan Saenredam, 1604) suggests that through knowledge, one may reach a heightened reality.

10. **Sometimes we know things without knowing that we know them**, ya know? Oswald is a playwright, and he talked about how people can know things subconsciously without knowing them consciously. For artists, the subconscious stuff may come through in what they create. He said, "If you're really going after something deep and strange and new, you're just not always going to be able to explain yourself."



A detail of Roberto Chavez's "The Path to Knowledge and the False University," 1974 | UCLA Chicano Studies Research Center. Learn the story behind this mural [here](#).