



1. *What's Your Venmo?*
2. *What Is the Current Science on Intelligent Aliens?*

What's Your Venmo?

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STAFF WRITER

Venmo is every college student's best friend. The mobile payment application offers users a convenient and safe method of exchanging money – especially helpful for young adults who are constantly on the go. The influence of technology has undeniably changed overall perceptions of mobile payments. A decade ago, there is no doubt, people would have scratched their heads at the idea of paying someone back with their phones. The ease and consistency of Venmo makes it appealing to the younger generation, ensuring the continued dominance of mobile payment systems.

Although Venmo usage is common at colleges across America, it seems especially so on the Hamilton campus. Students take advantage of the convenient food delivery services around Clinton, ordering food from establishments including Fortune Cookies, China Sea, Tony's, and Ting's Twist on Thai. Often, a student will order for a large group of friends and ask them to pay back. Paying back in cash is an option, but why take the time to pull out your wallet when you have Venmo downloaded on your phone and can complete a payment in less than five seconds? The convenience of mobile payment is unbeatable; it further ensures the success of Venmo and encourages the creation of even more mobile payment applications.

Concerns about safety and transparency, however, are potential Achilles heels for mobile payment systems. Venmo skeptics abound, and their doubt is understandable. In order to pay someone through Venmo, you have to know the person's username.

If you misspell the username and, as a result, pay a complete stranger \$50, there is nothing you can do to get that \$50 back (unless the stranger pities you and sends it back). The ability to complete mobile transactions quickly and on the run, however convenient, is never without cause for concern. But our emphasis on convenience is a main reason why safety is mostly an afterthought.

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In today's technologically advanced society, there are no signs that advances in mobile payment systems will halt. History has shown that technological progress not only bolsters prosperity but is also needed to keep up with economic demands. The American railroad system during the early 1900s is a prime example of this. The railroads enriched America's economy by transporting goods more efficiently from place to place. As a result, demand for railroad construction soared in order to continue such efficient movement of goods. We are seeing the same phenomenon with mobile payments, as evidenced with Venmo and Bitcoin, a form of decentralized electronic cash allowing users to transfer currency to each other. The convenience of doing this without worrying about the usual logistics leads to higher demand for Bitcoin.

It is only a matter of time before mobile payment dominates the global market. Venmo allows only American dollars, which makes it useful only to those who use the dollar on a regular basis. However, the frequency today of mobile payments will certainly set off a chain reaction internationally that will create more such online systems.

What Is the Current Science on Intelligent Aliens?

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STAFF WRITER

It has been an exciting month in the world of exobiology, the scientific study of possible life on other planets. A few weeks ago, scientists at Harvard University presented findings indicating that as much as 35 percent of all known planets larger than Earth may be water-rich. Following closely in their wake, researchers at the University of Chicago came out with a study last week in *The Astrophysical Journal* showing that the amount

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of water needed for life to develop comes in a much broader range than previously thought. The news has stirred up a lot of hype lately, and many are wondering if we have now reached a point at which it is no longer scientifically acceptable to think that humans are alone in the cosmos.

The answer, scientists in the relevant areas of expertise say, is yes and no. Yes—there are most likely other forms of life in the cosmos. No—there are probably not other *intelligent* life forms.

That life is likely to have evolved elsewhere in the universe is pretty uncontroversial among biologists. After all, not only are there billions

continued on back

of other planets in our galaxy, a good number of which appear to possess the conditions for life; there are billions of other galaxies in the observable universe. In fact, with the impressive advances in exobiology over the last thirty years or so, we might even be sanguine about finding some kind of life in our own solar system.

That *intelligent* life is likely to have evolved, however, is a different story. Almost no biologists of the relevant type make such a claim, and many of the leading evolutionary biologists of modern times—such towering figures as Ernst Mayr, Theodosius Dobzhansky, George Gaylord Simpson, Stephen Jay Gould, and Francisco J. Ayala—regard(ed) it as astronomically improbable.

“I do not know any serious evolutionist who believes there is intelligent life in the universe,” says Ayala. “The reason why so many physicists believe in that is because they don’t understand evolution. One who understands evolution realizes that no matter how many billions of trillions of trillions of trillions of planets, the probability that intelligent life would have come about is so insignificant that it could never come about again.” Dobzhansky was of a similar mind: “our species, mankind, is almost certainly alone in the universe.” There is “an incredibly low probability for the origin of extraterrestrial intelligence,” Mayr affirmed; “that is why only a few super optimistic biologists are willing to support the SETI [Search for Extraterrestrial Intelligence] project.” And Simpson was emphatic that “it is extremely improbable that [extraterrestrial] forms of life include humanoids.” Even the late Stephen Hawking, a physicist by training, maintained that “we might expect to find many other forms of life in the galaxy, but

we are unlikely to find intelligent life,” simply due to biological realities.

Mayr, Dobzhansky, Simpson, and Ayala attribute(d) the widespread belief in extraterrestrial intelligence to the popular misconception, even among many astronomers and physicists, that since intelligence is such an advantageous evolutionary adaptation, evolution will, given enough time and suitable places, inevitably progress toward creatures like us.

The idea is seriously misguided, however. To start with, mankind

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is not the pinnacle of evolutionary progress any more than the housefly or apple tree—each is the ultimate end of an evolutionary twig. (We are not even the most genetically complex species—that distinction goes to a lesser-known crustacean.) More importantly, however, the number of possible evolutionary pathways leading to intelligence simply pales into utter insignificance beside the number of possible evolutionary pathways that end up with some other successful adaptation.

Intelligence, first of all, is not really any more advantageous evolutionarily than countless other adaptations various species have, or could have, evolved. Think about it: among the trillions of non-intelligent species that have ever inhabited Earth (including, importantly, microbes), many have

adapted to their environment and reproduced just as, if not much more, successfully than humans have. As the notable experimental psychologist Steven Pinker put it, “evolution is about ends, not means; becoming smart is just one option.” Secondly, evolution is driven by totally random mutations, so its direction is unplanned, accidental, and haphazard; it would not progress deterministically toward intelligence, even if intelligence were highly advantageous evolutionarily.

Thirdly, since evolution operates by making minor changes on the preceding genome, which evolutionary adaptations can develop are determined completely by the contents of that preceding genome, which, in turn, were determined by the random mutations in the genome before that, and so on down the line. Each of these genomes, moreover, is a product of the environment it happened to find itself in at the time; only genes that allowed the organism to survive there could be passed on. So in order for any one particular complex trait like intelligence to develop, each *ancestor* must have had just the right genome for subsequent mutations to build on and just the right random mutations to arise, and must have resided in the right environment at that time for those mutations to be advantageous. The historical causal chain, which on this planet stretched over billions of years, is so incredibly contingent that the probability of it occurring again is virtually zero.

Intelligence really is “a glorious evolutionary accident,” as Gould has famously declared. Instead of hoping against hope to find it somewhere else, maybe we should use it for a moment to reflect on just how lucky we are to have it.

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CONTINUE THE CONVERSATION

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