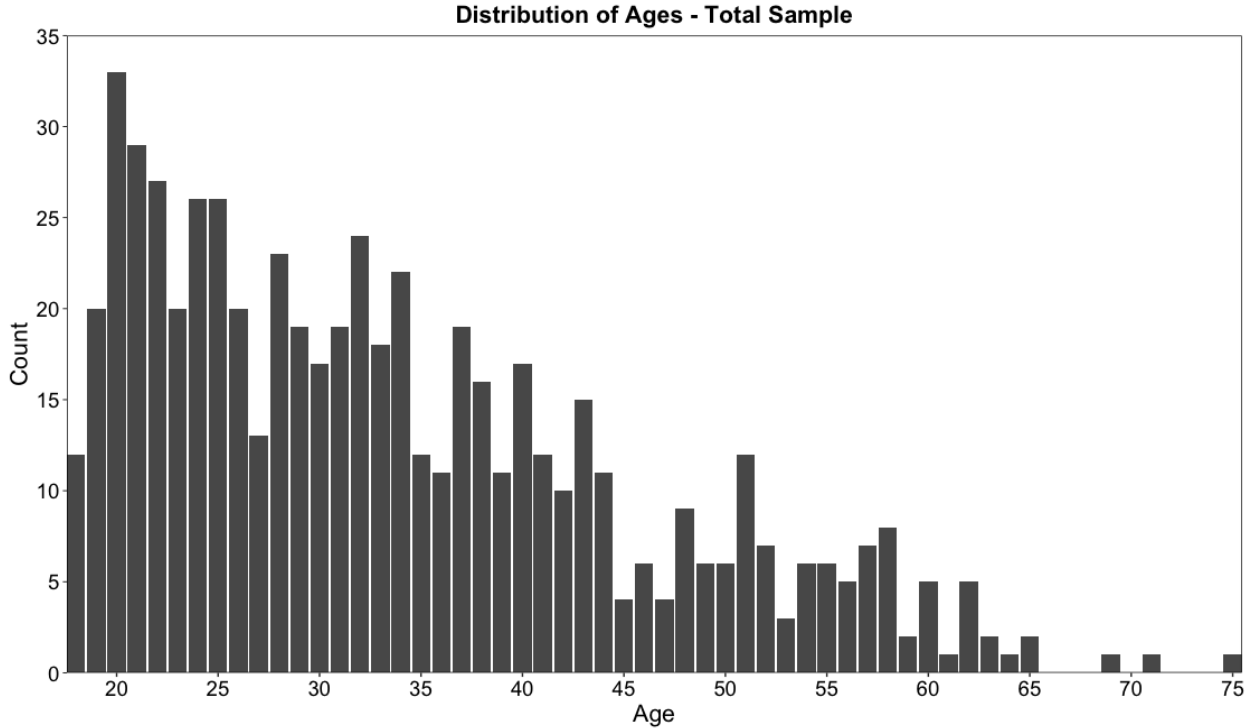


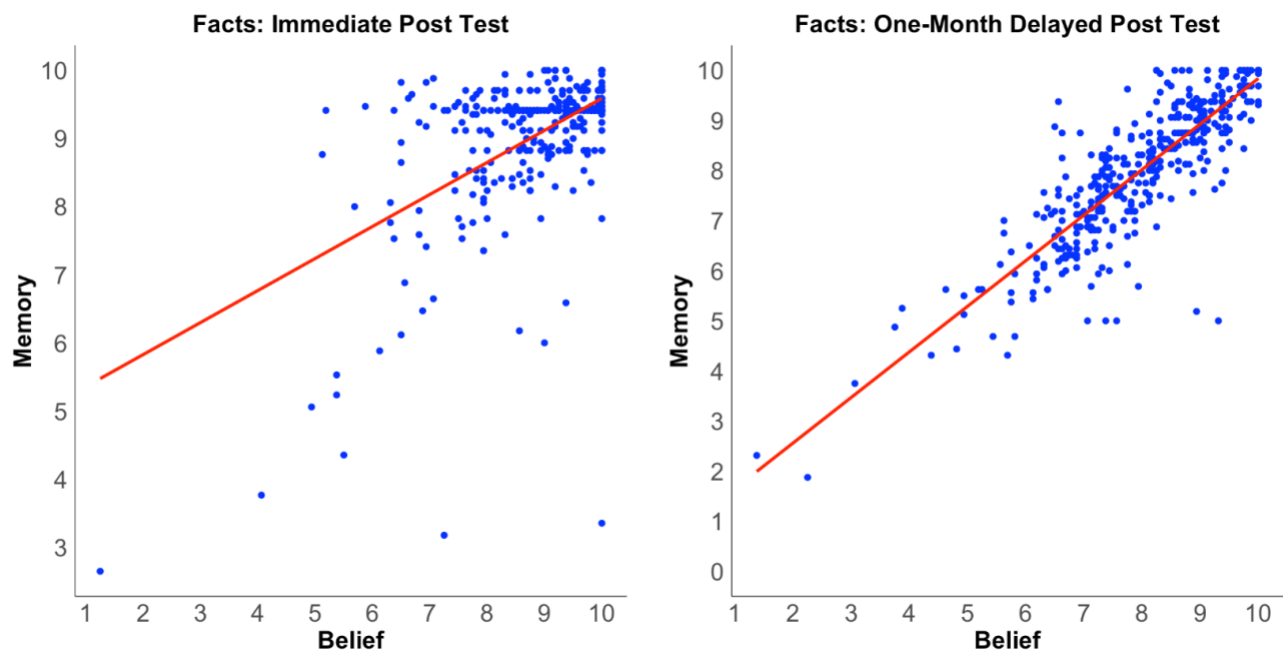
Supplementary Information

Figure S1

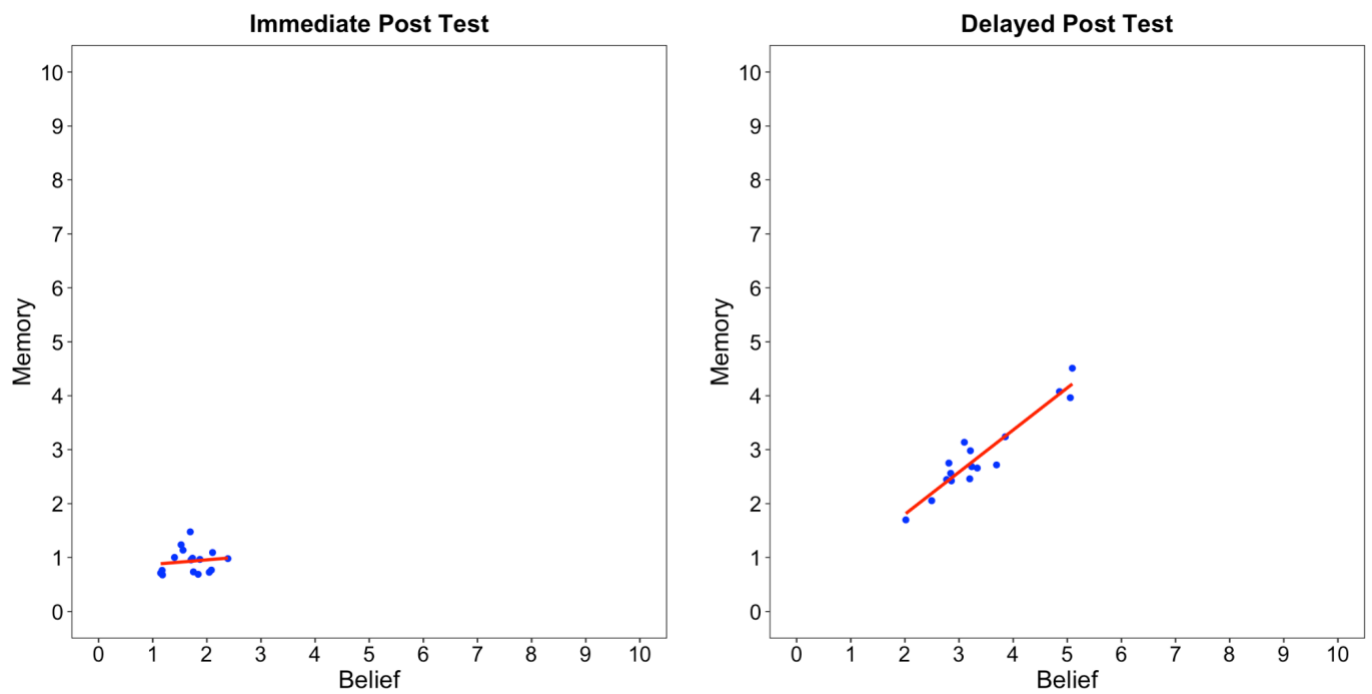


Supplementary Figure 1. Distribution of ages across the total sample.

Figure S2

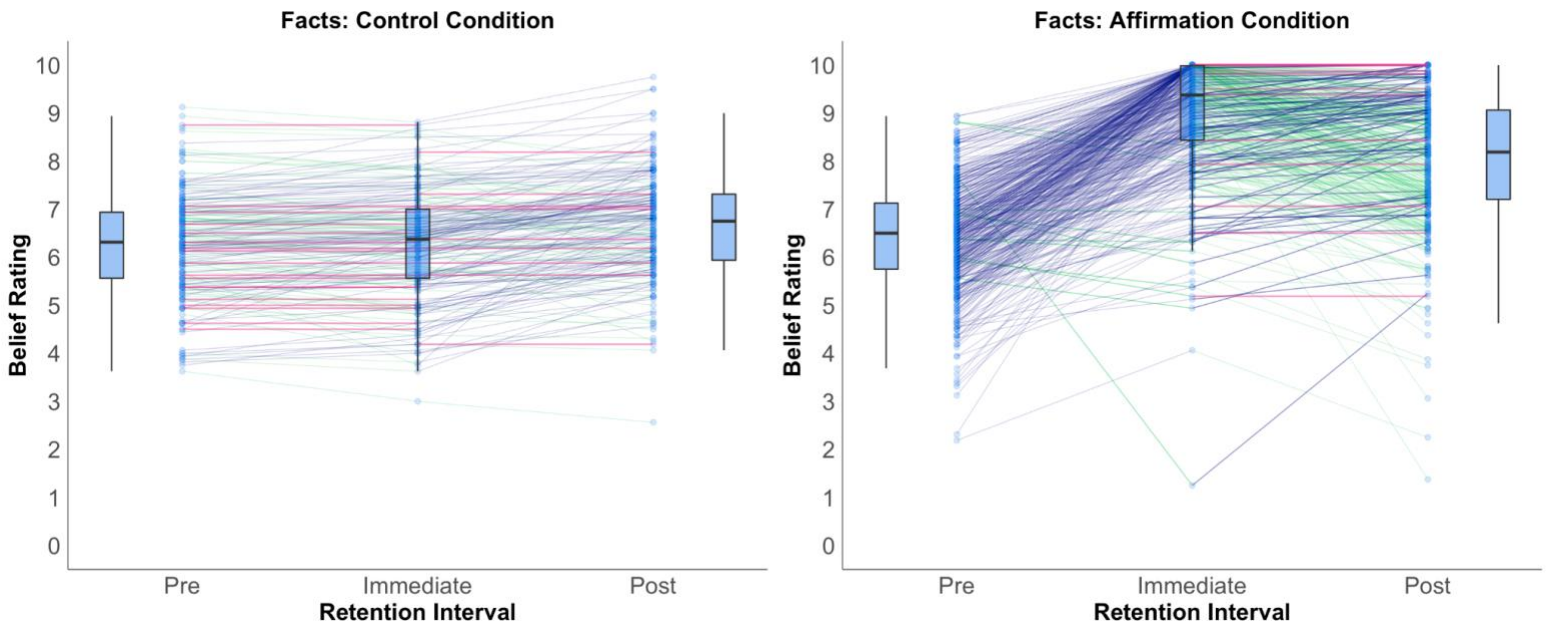


**Supplementary Figure 2.** Correlation between participants' memory and belief for corrected facts (collapsed across items) immediately after the correction, post-test (left), and at the one-month delayed post-test (right). At immediate post test,  $\rho = .51$ ,  $p < .001$ . At delayed post test,  $\rho = .85$ ,  $p < .001$ . ( $Z = -11.22$ ,  $p < .001$ ).

**Figure S3**

**Supplementary Figure 3.** Correlation between participants' memory and belief for corrected misinformation at item level. Left: item means immediately after the correction. Right: item means one-month after correction. At immediate post test,  $\rho = .09, p < .755$ . At delayed post test,  $\rho = .83, p < .001$ .

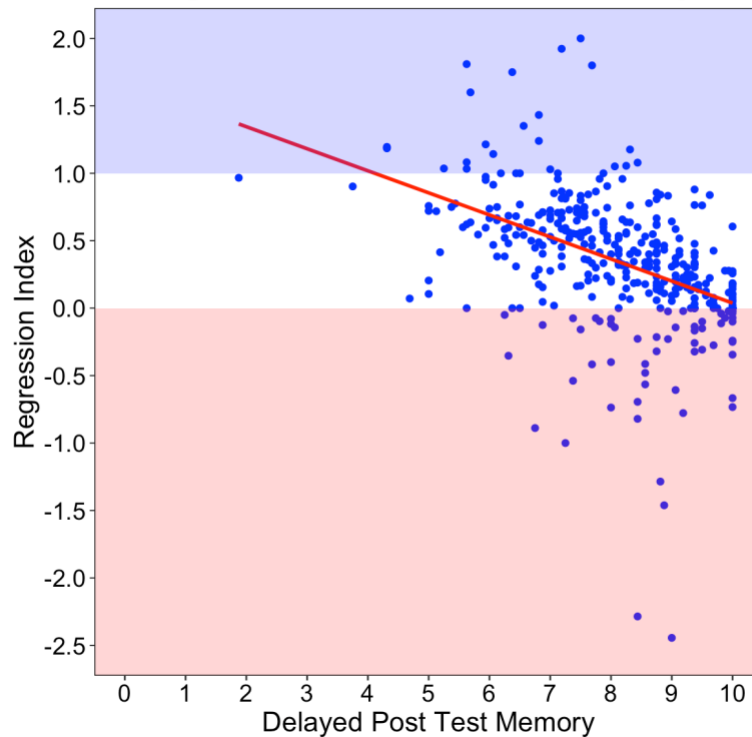
Figure S4



**Supplementary Figure 4.** Average fact belief per participant at pre-test, post-test immediate, and post-test delayed. In both control (left) and correction (right) conditions, green indicates a reduction of belief, dark blue indicates increasing belief, and pink lines indicate no change.

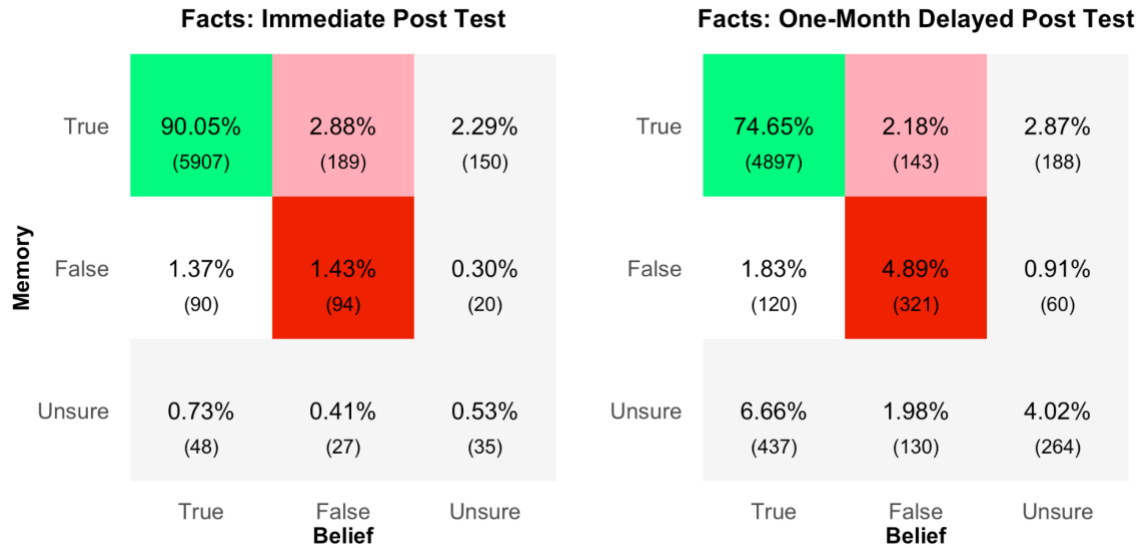
Figure S5

Facts: Belief Regression Index vs. Affirmation Memory at One-Month



**Supplementary Figure 5.** Correlation between belief regression index and memory for whether the facts were true in the delayed post-test ( $\rho = -.54, p < .001$ ). Participants who front-fired (shaded blue area), demonstrated belief regression (the white area), or increased their belief even more after a delay than immediately after corrections (shaded pink area). We excluded all participants for which this interpretation does not hold true. We removed participants (1) who decreased both immediately *and* after a delay and thus had a belief regression index below zero ( $N = 2$ ) and (2) who reduced their belief immediately and then increased and thus had a belief regression index between 0 and 1 ( $N = 1$ ). No participants had a belief regression index with a denominator of 0 in this analysis. Note that this involved removing .73% of the correction conditions and .49% of the total data.

Figure S6



**Supplementary Figure 6.** Fact memory and belief prevalence across all items in all participants, with raw trial counts in parentheses. Rating of 0-4 = false, 5 = unsure, 6-10 = true.

**Table S1.** Demographic variable breakdown across experimental conditions.

	<b>Control (N =202)</b>	<b>Belief First (N = 208)</b>	<b>Memory First (N = 202)</b>
<b>Gender</b>			
Male	105	106	87
Female	90	97	111
Prefer to self-describe	7	5	4
<b>Education</b>			
Did not graduate high school	3	1	2
High school graduate	29	24	26
Some college, no degree	48	56	49
2-year degree	20	22	16
4-year degree	70	70	75
Postgraduate Degree	32	35	34
<b>Partisanship</b>			
Democrat/Closer to Democratic Party	145	141	152
Republican/Closer to Republican Party	41	44	32
Other Party	16	23	18
<b>Age</b>			
Mean (SD)	33.85 (11.61)	33.35 (11.86)	34.14 (12.15)

Table S2

Misinformation	Correction	Reliability (immediate/ delayed)	Included in winsorized dataset
The daddy long legs is extremely venomous, but fortunately its fangs are too small to pierce human skin	According to scientists at the University of California, people commonly use the term "daddy longlegs" to refer to two types of creatures. One is not technically a spider and does not even have venom glands or fangs. The other does have fangs that could potentially pierce human skin. However, there is no record of its bite causing any detrimental reactions.	.87/.71	Yes
Females, on average, talk more than males	There have been several studies that found females talk the same amount as males. One study, published in Science, recorded hundreds of students' speech between 1998 and 2004. The students wore devices that recorded 30 seconds of sound every 12.5 minutes. The authors estimated that both men and women say around 16,000 words per day.	.91/.69	No
Sugar makes children hyperactive	A review of 12 blind studies found that sugar does not have any influence on a child's behavior. Blind studies are when the children, the parents, and the researchers do not know which child received sugar and which received a placebo. Exciting environments (like birthday parties), are likely to be responsible for a child's energetic behavior.	.91/.77	No
Ostriches hide their head in the sand when frightened	According to National Geographic, no ostrich has ever been observed to bury its head in the sand. If it did, it would likely suffocate. It may look as though ostriches are burying their head in the sand at times, when in fact they are swallowing sand and pebbles which help grind the food in its stomach and aids digestion.	.89/.63	Yes
There are herbal products than can cure cancer	According to the US National Cancer Institute, no herbal products have been shown to be effective for treating cancer. In fact, some herbal products may be harmful during chemotherapy or radiation therapy as they interfere with how these treatments work. However, some studies suggest that herbs may help patients cope with the side effects of cancer treatment.	.85/.66	Yes



Urine is an effective cure for a jellyfish sting	This myth originated from the television show 'Friends'. When Monica is stung by a jellyfish, the other characters remember a useful fact - that urine will remove the pain. Although this worked for the character in the show, there is no scientific evidence to support this remedy. Urinating on the affected area will only aggravate the sting.	.92/.73	Yes
A fish's memory is approximately seven seconds or less	Dr. Phil Gee, a researcher from Plymouth University, said that scientists have known for some time that fish - including goldfish - have a memory of up to three months. Dr. Gee conducted research showing that goldfish can even learn to tell the time. The fish were successfully trained to pull a lever that released food for only one specific hour each day.	.77/.60	Yes
If you cook with alcohol, it will "cook off" and the dish will become non-alcoholic	Many people believe that it is easy to cook off alcohol due to its low boiling point. However, a whopping 75% of alcohol remains even after setting the dish alight to "flambé" it. A paper called Alcohol Retention in Food Preparation found that 25% of the alcohol remained after a whole hour of cooking.	.87/.61	No
The gender pay gap is driven by the women being paid less for the same job	Data from 25 countries revealed that women earn 98% of the wages of men when doing the same job for the same employer. According to The Economist, the gender pay gap is primarily driven by the fact that women are less likely to hold high-level, high-paying jobs than men. In other words, women cluster in lower-tier jobs such as administrative roles.	.87/.72	No
A tooth partially dissolves if you leave it in cola overnight	While drinking cola is harmful to your teeth, you will not be able to see this overnight. A study published in the Journal of Forensic Sciences in 2011 found that a tooth was still whole after 26 days in cola. However, it did discolor the tooth brown. By contrast, hydrochloric acid dissolved the tooth in 19 hours.	.81/.56	No
Sharks don't get cancer	This myth was popularized in 1992 by the unscientific book Sharks Don't Get Cancer. It was subsequently revealed that the author was profiting from selling shark cartilage pills. Dr. Ostrander, from the University of Hawaii, published a paper showing that sharks, skates and rays have been found to get many kinds of cancers, including malignant tumors.	.61/.33	Yes

Saunas help to sweat out toxins	The function of sweating is to cool the body as water evaporates, rather than remove waste products. This is best left to other parts of the body, such as the liver and the kidneys. According to a Professor of Dermatology, sweat is 99% of water, with tiny amounts of salt and other minerals. This makes it impossible that saunas help sweat out toxins.	.92/.72	No
Mercury in vaccines can cause harm	There are two types of mercury. Methyl mercury builds up in the body and is toxic. Ethyl mercury—the type within vaccines—is excreted rapidly from the body. In 2006, an expert panel assembled by the World Health Organization concluded that there was “no evidence of toxicity in infants, children or adults exposed to [mercury] in vaccines”.	.92/.70	Yes
Reading in dim light will eventually ruin your eyesight	According to Harvard Health Publishing, there is no evidence that reading in suboptimal light causes lasting eye damage. It may feel uncomfortable after an extended period of time, yet the most serious outcome would be minor eye strain, or eye fatigue, which is temporary. Some people may also get a headache from squinting, yet this too is temporary.	.89/.69	Yes
Fish oil is good for heart health	In September 2012, researchers re-examined fish oil data from 20 clinical trials involving nearly 70,000 people. They found that fish oil supplements were not associated with a lower risk of heart attack, stroke, or sudden cardiac death. At high doses, the side effects of fish oil include thinning of the blood, nausea and may also reduce immune system activity.	.84/.64	No
Stress causes cancer	According to Cancer Research UK, there is no evidence that people who are more stressed are more likely to get cancer. While people under stress can sometimes increase other behaviors that can increase the risk of cancer (such as smoking, overeating or drinking heavily) stress itself does not.	.84/.57	No

*Note:* Reliability was calculated via Spearman correlation of raw scores per item at pre-test with raw scores per item at immediate post-test (first value) and one month delayed post-test (second value).

**Table S3**

<b>Fact</b>	<b>Affirmation</b>	<b>Reliability (immediate/ delayed)</b>	<b>Included in winsorized dataset</b>
Illegal immigrants living in the U.S. do not commit crimes at higher rates than most Americans	There are several studies showing that illegal immigrants to the US commit crimes at lower rates than locals. One study found that illegal immigrants were 44% less likely to be in jail than locals. A separate study, published in the journal Criminology, found that there was a decrease in violent crime when there was an increased number of illegal immigrants.	.79/.62	No
Caucasians are often born with blue eyes which can subsequently change color	A Caucasian baby is often born with blue eyes, which may potentially change color as the baby ages. According to scientists at Maimonides Medical Center, the iris produces melanin as the eye is exposed to sunlight. Melanin is a pigment that makes the eye darker. Eye color in most cases is permanent by a child's first birthday.	.88/.59	Yes
Some sleepwalkers can do complex tasks	Sleepwalking occurs more often in children than adults, and it can involve just about any task. Actions can include getting dressed, driving a car, or cooking a meal. Sleepwalking is increasingly a difficult legal area. According to the Minnesota Regional Sleep Disorders Center, people using the "I did it in my sleep" defense is on the rise.	.87/.69	Yes
Some body gestures are universally understood	According to psychologists from San Francisco State University, there are some gestures which are universally used. For example, athletes from all cultures make the same posture when they win: arms raised in a "V" with the chin raised high. The same is true for athletes who have been blind from birth, suggesting that the victory pose is innate.	.89/.58	No
People are taller in the morning than in the evening	We have known for well over a century that people are taller in the morning, and we shrink throughout the day. This is due to gravity compressing our spine. In 1935, DePukey measured 1216 participants between 5 and 90 years old, and found the average person was 1.5cm shorter in the evening compared to the morning.	.93/.71	Yes

## BELIEF REGRESSION

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An opera singer's voice can shatter glass	Every piece of glass has a natural resonant frequency, which is the speed at which it will vibrate with a sound wave. If a person sings this frequency loud and long enough, the glass will shatter. According to a mechanical engineer from Columbia University, this occurs due to the microscopic defects the glass has to begin with.	.88/.69	Yes
Too many carrots will turn your skin orange	Beta-carotene is a pigment that is in carrots and sweet potatoes. Eating foods high in beta-carotene can indeed cause skin to become orange or yellow. It is a benign condition which mostly affects young children and vegetarians. According to a 1952 scientific paper, treatment involves simply not eating carrots for an extended period.	.91/.76	Yes
Yawning is contagious	When adults are shown videos of people yawning, many begin to yawn themselves. In fact, it is so contagious that simply thinking about it (or reading about it), is sufficient to initiate a yawn. The reason why we do this is still being debated, but research from the University of Connecticut suggests it may be associated with empathy.	.83/.69	No
Dogs shouldn't eat chocolate	Dogs can experience dangerous effects from eating chocolate, and in some cases it could be lethal. According to pharmacology research from the 1980s, chocolate contains a compound called theobromine. It has no adverse effect on humans, but it is processed more slowly in a dog's body. It can affect their heart, central nervous system, and kidneys.	.84/.64	No
A cockroach can live for over a week without its head	According to a physiologist at the University of Massachusetts Amherst, cockroaches can survive decapitation for several reasons: (1) they breathe through 'spiracles', little holes in its body, (2) their nervous system is located throughout their body so are not reliant on their brain, and (3) they don't need much food but will eventually die of starvation.	.82/.53	Yes
Honey is antibacterial	Honey has historically been used to treat a variety of ailments. According to biomedical scientists, it has well known antibacterial properties. These include high sugar content and low pH levels. Manuka honey from Australia and New Zealand is particularly	.81/.64	No

	renowned for its antibacterial properties. It is often referred to as “medical grade” honey.		
More than 80% of the ocean remains unexplored	The ocean covers more than 70% of the planet’s surface, yet more than 80% of the ocean remains unexplored, according to the US National Ocean Service. This not only means it is unseen by human eyes, but that it has not been mapped. This is because the ocean is exceedingly vast, there is no light, and often crushing pressure.	.78/.43	No
Elephants have a remarkable memory	Elephants have been repeatedly shown to have remarkable memories. This is particularly the case when it comes to remembering other elephants and routes to water sources. They are also good at keeping track of the location of other elephants. According to psychologist Richard Byrne, they can keep track of up to 30 companions at a time.	.86/.59	No
Some people sneeze after exposure to sunlight	Sneezing due to sunlight is known as a "photic sneeze". It is a reflex that can occur due to any bright light or a change in light intensity. It affects between 18 and 35% of the population and has a large genetic component. A study by University of Alabama found that 94% of photic sneezers were Caucasian and 67% were female.	.89/.81	No
Hypnosis is effective for pain management	There are many studies suggesting that hypnosis can help with pain. A 2016 review of 29 randomized clinical trials showed that hypnosis decreased pain. This was particularly true for minor surgery but also helped with child birth, burns and chronic pain. Hypnosis for pain generally involves suggestions for relaxation, comfort and mental imagery.	.81/.60	Yes
Dogs can smell cancer	Dogs perform better than state-of-the-art screening tests at sniffing out people with some cancers. Cancer patients have traces of chemicals in their breath, and dogs can detect them. The University of California conducted a study where dogs correctly detected cancer in 99% of lung cancer patients. Only 1% of the time did they mistakenly assume that healthy people had cancer.	.93/.76	Yes

*Note:* Reliability was calculated via Spearman correlation of raw scores per item at pre-test with raw scores per item at immediate post-test (first value) and one month delayed post-test (second value).