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Author:Tianhe Si



Waking Up the "Sleeping" 90%?

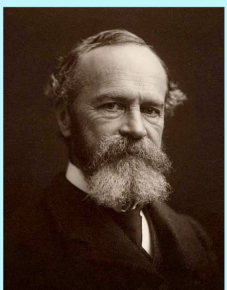
— Debunking the Brain Myth

Have you ever heard that crazy rumor in books, movies, or online posts: "Humans only use 10% of their brains, and if we unlock the other 90%, we can get superpowers or learn languages instantly!"Sounds like a superhero movie, right? But this is completely false.Where did this idea come from? And how do scientists know it's a lie?



The story goes back to the late 19th century. A famous American psychologist named William James wrote that people only use a small part of their mental and physical potential.Notice that he never said "10%". He was just trying to encourage people to work hard and improve themselves.However, over the years, people added to his words.

In 1936, a writer named Lowell Thomas added a specific number when writing an introduction for Dale Carnegie's famous book. He claimed that the average person only uses 10% of their brain power. And just like that, a huge science myth was born!



William James（January 11, 1842 – August 26, 1910）

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If 90% of our brain was just sitting there doing nothing, nature would have made a huge mistake. Scientists have tested this idea with several strong proofs:

1.Brain Scans (like fMRI)

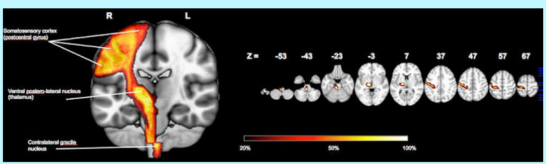
Using modern brain-scanning machines, scientists can watch the brain in action. The results show that almost all parts of the brain are active, even when we are resting, sleeping, or just daydreaming. No large area is ever completely turned off.

2.Brain Injuries

The brain is split into specific jobs. If 90% of it wasn't needed, people wouldn't get hurt very much if a small part was damaged. But medical records show that even a tiny injury to the brain can cause big problems with speaking, seeing, moving, or remembering.

3.The Energy Cost

The brain makes up only about 2% of our body weight, but it uses 20% of our body's total energy. Evolution follows a simple rule: if an organ uses that much energy, it has to be useful. Nature would never waste energy keeping 90% of an organ idle.



https://commons.wikimedia.org/wiki/File:Cortical_proprioceptive_pathway.png

What Is Your Brain Doing All Day?

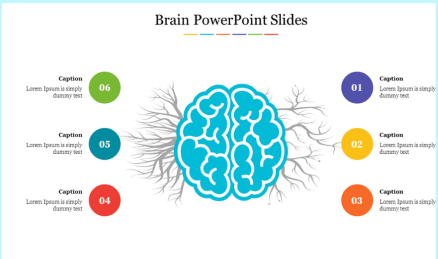
Even when you feel like you are doing nothing, your brain is working non-stop:

Running the Body: Keeping your heart beating, lungs breathing, and body temperature stable without you having to think about it.

Filtering the World: Processing millions of signals from your eyes, ears, and skin every second, while blocking out things that don't matter.

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Cleaning and Storing Memories： When you sleep, your brain organizes everything you learned during the day and moves short-term memories into long-term storage.



So, stop waiting for a secret "90% unlock button" or a magical pill to give you superpowers. The truth is much cooler: your brain is already working 100% hard, doing an amazing job every single second of the day!

Think about what happens when we study or face challenges at school. Every time you struggle with a tough math problem, memorize a poem, or learn a brand-new skill, your brain responds by physically changing and building stronger connections. It's like a muscle at the gym—the more you use it, the better it gets. Struggling isn't a sign of failure; it’s proof that your brain is actively leveling up and growing smarter.

That’s why the real way to "upgrade" your brain isn't some sci-fi fantasy. It’s taking care of this incredible organ through the basics: getting a solid night's sleep to let your memory clean house, fueling up with healthy food, and—above all—keeping your sense of wonder alive.



Never stop asking questions, never lose your curiosity, keep exploring and keep thinking!

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Author:Tianhe Si

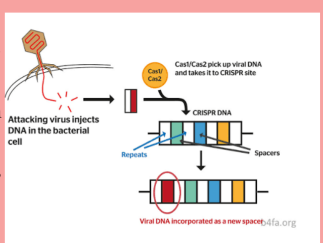
CRISPR Technology

Genes serve as the carriers of hereditary information in living organisms, determining every detail from human morphological characteristics to physiological functions. Throughout the prolonged exploration of life sciences, humanity has consistently sought to decipher and rewrite this master text containing the secrets of life. In the past, when confronting congenital genetic disorders induced by gene mutations, modern medicine was often restricted to long-term pharmacological control or symptomatic supportive care, finding it difficult to achieve a complete cure. However, with the recent birth and rapid development of CRISPR-Cas9 gene editing technology, humanity has officially grasped a "molecular scalpel" capable of directly rewriting the code of life.



CRISPR originates from a natural adaptive immune system used by bacteria and archaea to defend against viral infections. By storing snippets of viral DNA in their genome as an "archive," bacteria deploy Cas proteins (like Cas9) guided by RNA to precisely locate and cut foreign viral DNA upon reinfection.

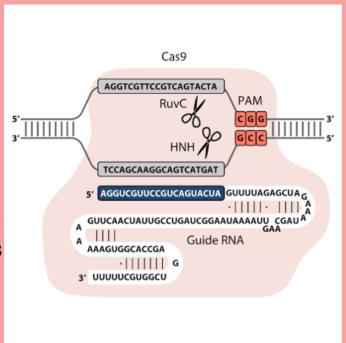
Scientists adapted this defense mechanism into a programmable gene-editing tool. By designing custom guide RNAs, researchers can direct the Cas9 "molecular scissors" to target specific sites in the genome. Utilizing the cell's natural repair mechanisms, scientists can then knock out mutated genes, repair faulty base pairs, or insert normal sequences with high precision and efficiency.



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CRISPR has achieved major clinical breakthroughs in treating single-gene disorders and cancers. For blood disorders like sickle cell anemia and beta-thalassemia, correcting patients' stem cells ex vivo with CRISPR can restore normal hemoglobin and eliminate transfusion dependency. In cancer immunotherapy, CRISPR is used to engineer T cells—such as enhancing CAR-T therapies or knocking out checkpoint genes—to more effectively combat leukemias, lymphomas, and solid tumors.



Despite its vast potential, CRISPR carries significant safety and ethical risks. First, "off-target effects" can cause unintended mutations if the molecular scissors cut incorrect genomic sites. Second, germline editing alters heritable DNA for future generations, leading to a strict international consensus against human embryo editing until safety and regulatory frameworks are fully established.



In conclusion, CRISPR shifts humanity from "reading" to "rewriting" life, offering immense hope for curing genetic diseases. As a double-edged sword, it requires a careful balance between innovation and ethical responsibility, ensuring science is always guided by reverence for life.

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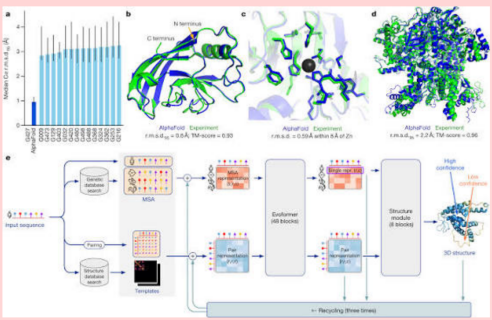
Author:Tianhe Si

AI in Modern Medicine

Artificial intelligence (AI) is rapidly transitioning from abstract concepts to clinical and laboratory reality, becoming a core driver in reshaping modern medicine. Through concrete and impactful examples, we can clearly see how AI is transforming healthcare

In the field of drug discovery, the most representative example is the AlphaFold model developed by DeepMind. Historically, resolving the three-dimensional spatial structures of key proteins—which is essential for understanding disease mechanisms and designing targeted drugs—required scientists years or even decades of intensive labor. Today, using artificial intelligence technology, AlphaFold can accurately predict the 3D structures of virtually all known proteins in just a few seconds. This breakthrough has directly accelerated molecular design for cancer therapies and rare diseases, drastically shortening the traditional decade-long drug development cycle.

In clinical diagnostics, consider IDx-DR, the first fully autonomous AI medical device approved by the U.S. Food and Drug Administration (FDA). It is specifically designed to automatically screen for diabetic retinopathy, a common blinding eye disease.



q=AlphaFold%20model&imgurl=https%3A%2F%2Fupload.wikimedia.org%2Fwikipedia%2Fcommons%2F
A%2F%2Fcommons.wikimedia.org%2Fwiki%2FFile%3AAlphaFold_2.png&docid=AF7msG7NtAg9K

Clinicians simply upload a patient's retinal fundus photograph into the system, and IDx-DR independently determines whether the patient has moderate or more severe diabetic retinopathy within tens of seconds, without requiring an ophthalmologist to be present for manual review. This not only elevates screening efficiency to unprecedented heights, but also allows patients in remote areas to receive prompt, precise early-stage diagnoses close to home.

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Ultimately, artificial intelligence is not positioned to replace human clinicians; rather, through tangible technological milestones like AlphaFold and intelligent imaging screening systems, it serves as a powerful catalyst for the healthcare industry, guiding modern medicine toward greater precision and efficiency.

Author:Tianhe Si

Understanding Early Action and Early Decision in University Admissions

As high school seniors navigate the complex landscape of higher education applications, universities provide various pathways designed to accommodate different timelines and enrollment strategies. Among these options, the early application tracks—specifically Early Decision (ED) and Early Action (EA)—represent two distinct structural mechanisms that differ significantly in their binding agreements, application limitations, and overall impact on the admissions timeline. Both options typically feature application deadlines falling on or around November 1st, but their operational rules and subsequent obligations for students diverge profoundly.



What is Early Decision (ED)?

Early Decision is defined primarily by its binding commitment. When a student chooses to apply to a university through an Early Decision plan, they are entering into a formal agreement with that institution. The core principle of ED is exclusivity and obligation: if the university evaluates the application and offers the student admission, the student is contractually and ethically obligated to enroll at that institution.

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Because of this binding nature, the rules governing Early Decision are strict:

The Single-School Limit: A student can only apply to one university under an Early Decision plan at a time. It is impossible to apply to multiple institutions simultaneously using ED because doing so would violate the binding contract if multiple acceptances were issued.

Withdrawal of Other Applications: Upon receiving an acceptance letter under an ED plan, the student must immediately withdraw all active applications submitted to other universities and cease any further application submissions.

Financial Considerations: While universities provide estimated financial aid packages alongside acceptance letters, the binding nature means families must carefully evaluate affordability beforehand. Some institutions offer binding agreements where financial aid packages are reviewed upon acceptance, and exceptions to the binding rule are generally only granted if the demonstrated financial need cannot be met by the institution's aid policies.

To accommodate different timelines, some universities also offer Early Decision II (ED2). ED2 follows the exact same binding rules as regular Early Decision, but the deadline and notification dates occur later in the academic year (usually with a January deadline and a February decision release). This allows students who were deferred or wish to commit later in the cycle to utilize a binding option for a different institution.

What is Early Action (EA)?

In contrast to Early Decision, Early Action is characterized by flexibility and lack of binding obligations. Early Action allows students to submit their applications ahead of the standard timeline and receive an admission decision early—typically by mid-December or January—without requiring any commitment to enroll.

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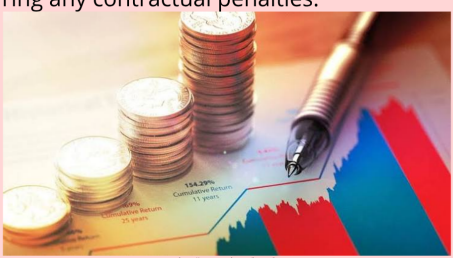
The features of Early Action include:

Non-Binding Enrollment: If a student is accepted through an Early Action plan, they are under no obligation to commit to the university immediately. The student retains the freedom to evaluate admission offers and financial aid packages from all other institutions to which they have applied.

Standard Decision Deadline: Admitted EA candidates do not need to make their final enrollment decision until the universal national reply date, which is traditionally May 1st. This grants students several months to compare options, visit campuses, and weigh academic or financial factors.

Multiple Applications: Unlike Early Decision, standard Early Action does not restrict students to a single school. Applicants can apply to multiple universities via Early Action simultaneously, expanding their early choices without incurring any contractual penalties.

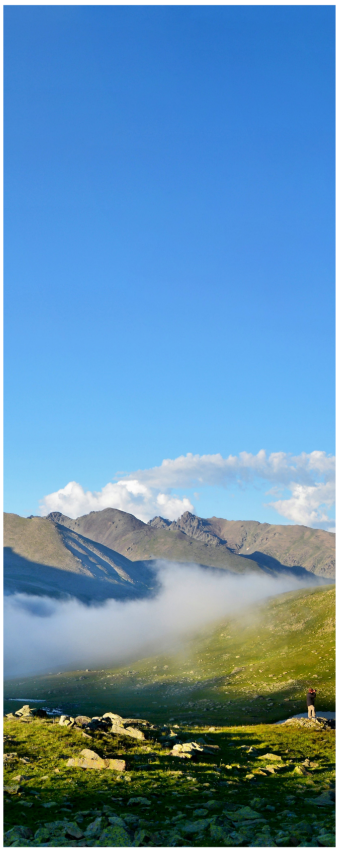
Early Decision (ED) and Early Action (EA) are two ways to apply to universities ahead of the standard timeline, typically with a deadline around November 1st. Early Decision is a binding agreement where you can only apply to one school and must attend if accepted, while Early Action is non-binding, allowing you to apply to multiple schools and keep your options open until spring.



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Good luck to the Class of 2027 with your applications!

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