



# WIFE

Jan to Mar 2023

Past

# WLIFE

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# Dear Readers,

*The bleakness of winter dissipates with the melting snow, transforming into trickling water that gathers to form a pool of intoxicated spring. The thawing river flowing down from the mountains amplifies the heartbeat of the impending season. The mountain curves with complementary femininity, displaying the allure of their silhouettes with the announcement of their pale green garb.*

*This season, the theme of WLife is "True Self." We all wear certain masks to conform, such as the good student, well-behaved child, quiet girl, or macho man. We often pretend to be the people we are expected to be, forgetting our true selves. WLife suggests that we should embrace our untwisted self. Although the process is challenging and may result in confusion and misunderstandings from friends and family, remember that you are always the best version of yourself without any disguise. The article includes sections on how art, science, and literature guide students to discover their true selves in different ways. Appraising the theme of "True Self" will help WLSA students realize their identities the way they were made.*

*Best regards,  
Michael C*

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WLSA SHANGHAI ACADEMY  
JOURNAL

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# *Art Gallery*

*"Art is not what you see, but what you make others see."*

*--- Edgar Degas*

# Golden Days

- 欧阳乐怡 Bella Ouyang

Time passes, things change. You could be anywhere in the world, doing anything that matters to you at that time, but perhaps someday, sitting on the park bench, you will recall yourself ever once sitting on a similar chair, playing with your puppies, never get tired.



# Babel

- 欧阳乐怡 Bella Ouyang

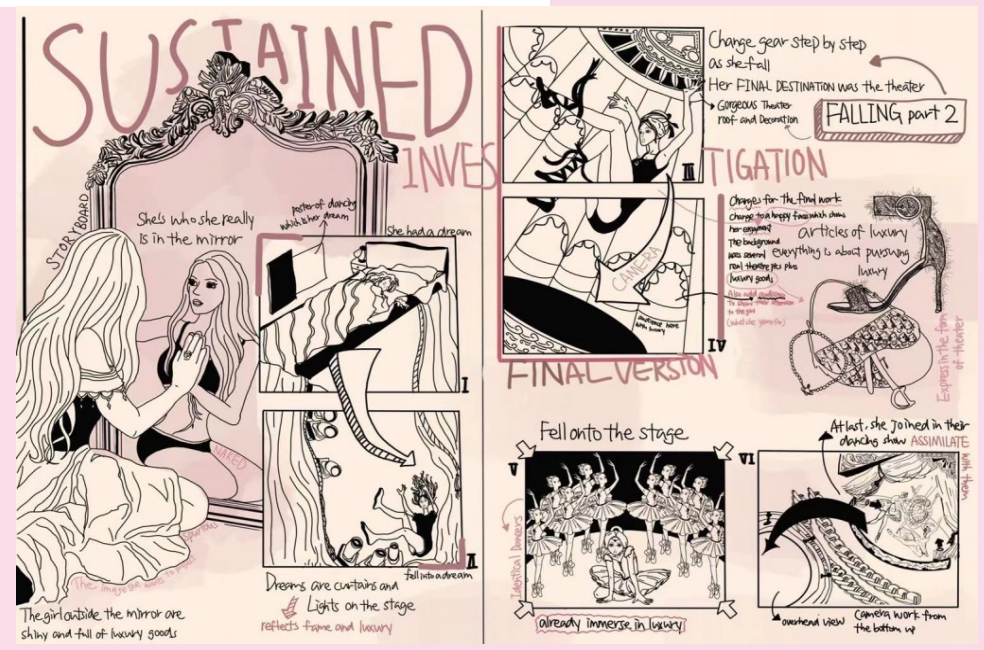


Walking on the steps in the spiral tower, traces of experience are left and hang on the wall, with new adventure capable to see through the windows. However, as the journey is finished, adventurers come back to the bottom of the tower, where it was lifted.



A girl indulged in luxuries and fell into a bottomless theater full of luxuries.

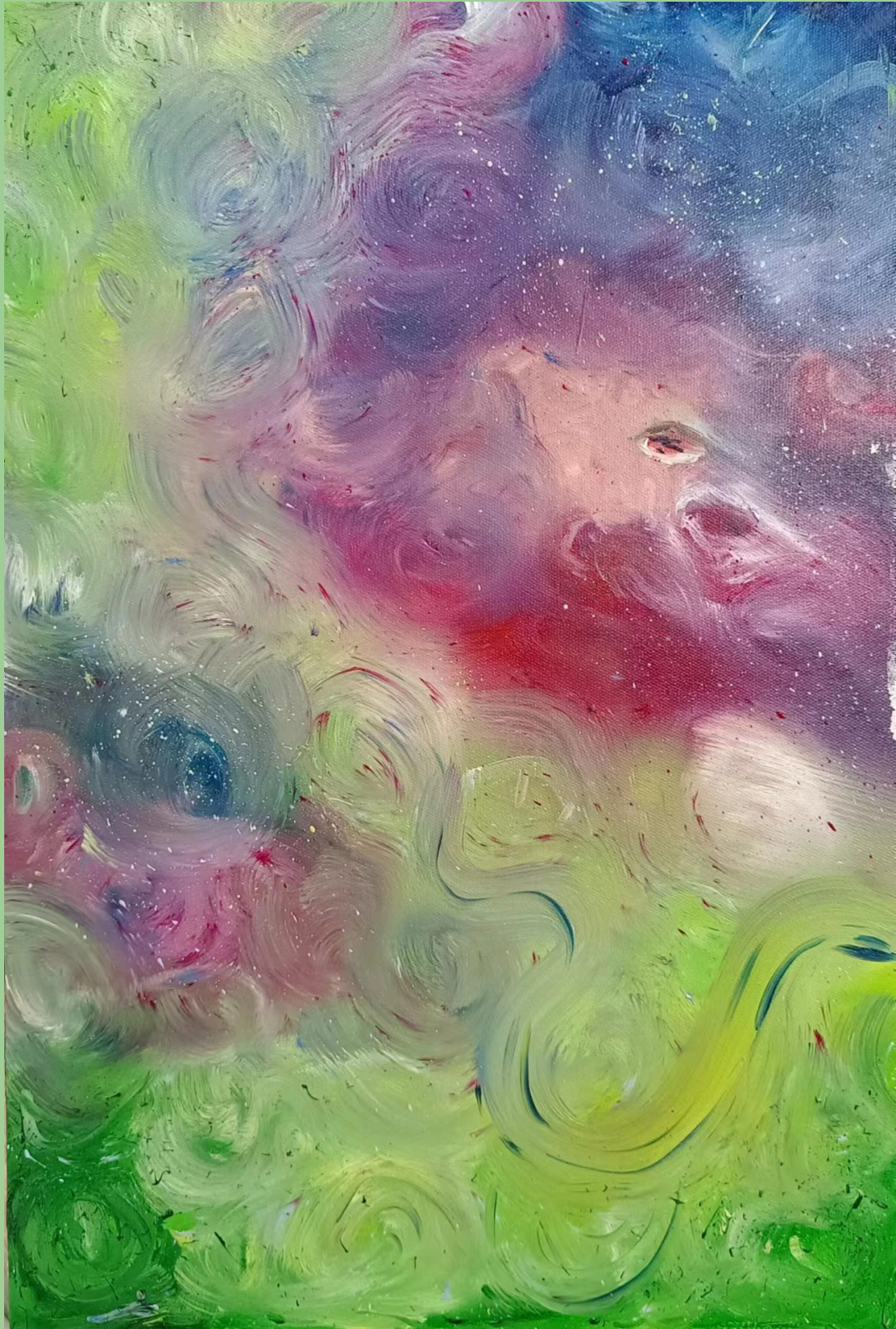
By G11 Eta Sophia Xu





现实与梦境相通，如同深海中的一抹

亮光，照亮阴霾，梦是虚幻的，令人沉醉的，美好的，就像虚伪的人性一样。

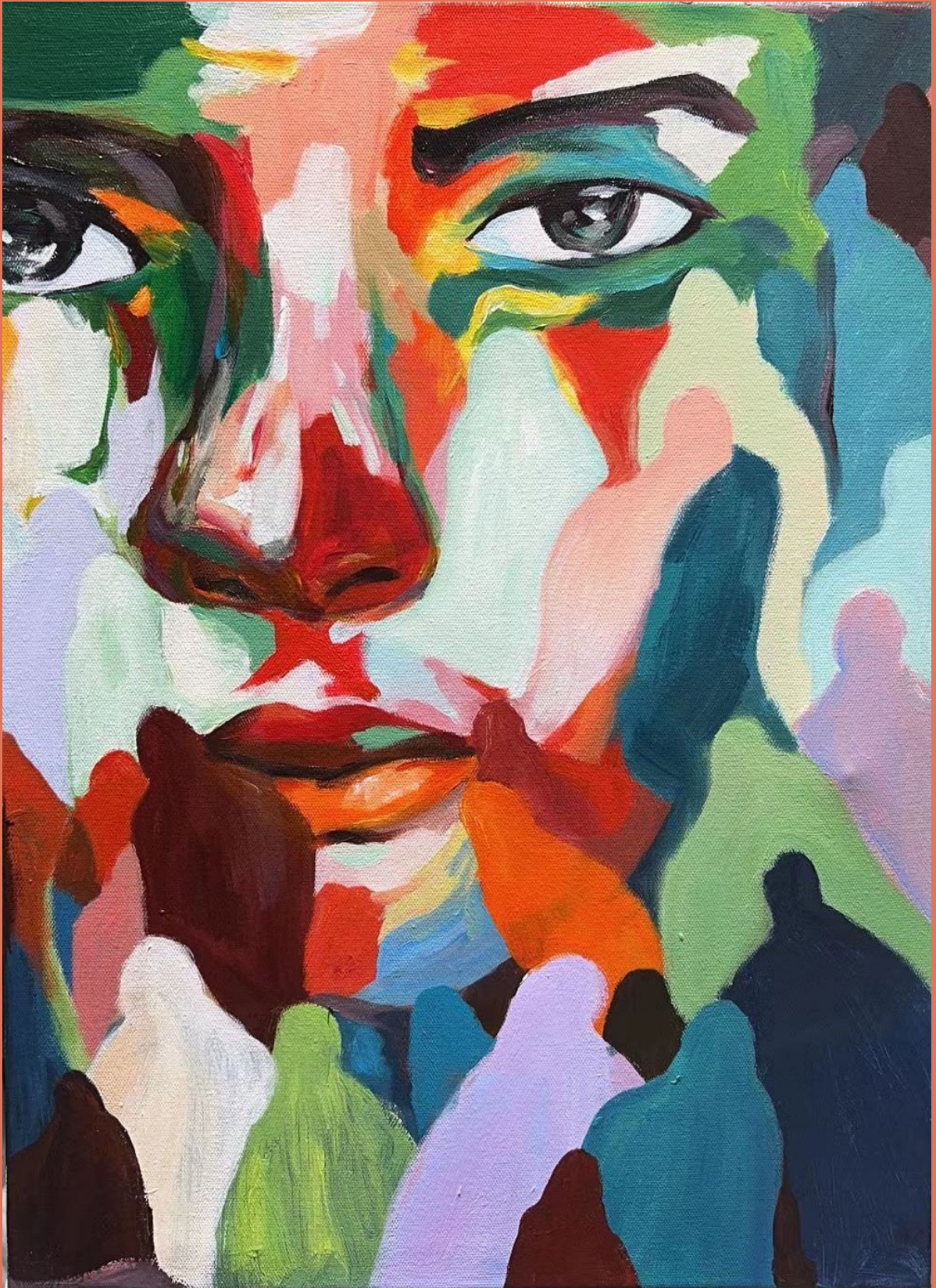




# Trueself

G11 Eta Sophia Xu

Exquisite makeup, gorgeous dress, a man puts on his dancing shoes and prepares to appear on the stage



By Melvin 郑博宁

我们往往为了融入多元的社会去变得包容万物，然而只有那对清澈的眼神里才能透露出真实的自己。

# *Literature Workshop*

*"Literature is the most agreeable way of ignoring life."*

*--- Fernando Pessoa*



# "Past"

A few days ago, I met someone who looked about my age. When I saw him, I thought I was familiar with him, but I couldn't remember who he was. So recently, I've been thinking, when I was a child, did I do anything or make friends? I only seem to remember a life after the age of 17. Whenever I think of this problem, I have a headache. Something seems to be locked and wants to break in through the door and dash out. Several times, I wanted to explore the answer from my father. However, when I said the word "boy", he looked at me in fear and surprise. I've never seen such an expression on his face, so every conversation ends here. These confused things also aroused my curiosity about my past.

## Alan's Dairy (Fifteen years ago, when Alan was 15.)

Today, a new neighbor moved in. There was a couple and their son who looked as old as me. In the afternoon, they came to our house as convention and brought some snacks and gifts. I was playing games on the sofa, the boy was in a daze, and the parents were discussing their children. I feel a little bored after 10 minutes. I took the initiative to smile and asked him if he wanted to play games with me. He cruelly refused me. "My name is Alan. What's your name?" I still haven't given up on establishing a relationship with him. "Edmund Garcia," he replied, looking at me with out

any expression. Then they went home. My parents told me that he was five days younger than me, and was expected to receive the passage with me. "Passage? What do you mean by that?" I asked them suspiciously. They thought for a long time and told me that it was a process from a boy to a man.

"Dad, what have you experienced during the passage?" "...Sorry, I don't seem to remember, but it's something everyone has to experience." What he said made me very confused. The passage is a mysterious thing.

Later, Edmund's mother often brought him to visit us. Every time, she was very warm and generous and brought some snacks I like to eat. Edmund is nothing like his mother. He is always expressionless. It's a waste of his handsome face. However, I insisted on talking to him and found that he was as curious about this article as I was. So we became friends and began to study the text together. We decided to gather in the library in the city center every Sunday to study. One day, I suddenly found a rare written record in the book. "Edmund, look here! The book records a phenomenon that all men seem to temporarily lose their memories of childhood." I pointed at him. "Yes, I saw it here, too, but what did they experience during their journey that caused them to suddenly lose their memory?" Then we began to search for information in the library, but we got nothing. I suddenly asked, "if we lose the memory of childhood, we will forget each other." He was silent. I continued, "but I don't want to forget you." He nodded in agreement with me. "Let's find a way to keep these memories... How about keeping a diary?" So keeping a diary became a habit for me and him. But at the same time, we don't give up looking for the cause of memory loss. We usually study until the next morning.

In May, we celebrated our 16th birthday at the same time. According to records, the rite of passage was held on our 17th birthday. So the arrival of the 16th birthday also means that the mysterious passage is coming. This is also the first time he and I invited others to celebrate our birthday together, although he and I are the only two people at the birthday party to bless each other. I have been with him for half a year. I find that I always have a tacit understanding of him and get along well with him. I gave him a necklace on his birthday, and he also gave me one on my birthday, because, in our culture, the necklace represents a lifetime with a soul friend. I think he should be the same as

I think. We want to leave our traces on each other before the rite of passage. Although it's childish, this is the way for us to remember this memory. Then we ushered in the final exam. My school had a holiday more than ten days earlier than him, and I was very free, so I spent every day in the library studying passages. All I want to do is find out the truth that belongs to us before I lose my memory. This is a huge amount of reading for me, because a book with thousands of pages may only have a few sentences describing the passage. Without Edmund's help, I had to complete all the screening and extraction of information by myself. Every time I'm tired, I look at the necklace around my neck and become energetic. Gradually, I found a rule -- everything about the passage seems to be a mystery. The government did not mention it in textbooks, nor did it issue any authoritative articles or statements. The only research that can be found in the views of a few scientists or people who are interested in it. This gave me a hunch that the rite of passage might not be a good thing to be proud of. So when I got home, I asked my father again, "is the rite of passage a good thing to be proud of and happy?" My father thought about this question for some minutes, but he had nothing in his mind except the basic definition of the rite of passage. All the memories seemed to be erased in a moment, leaving only the memory of life as a man.

A few days later, Edmund and I discussed this point. Fortunately, we have achieved ideological unity. To find out the truth as soon as possible, we have three days a week to study adult rites. But in March of the next year, about two months before our 17th birthday, Edmund disappeared, including his parents. I anxiously asked my parents where Edmund had gone, and they only told me that the Edmonds had moved away.

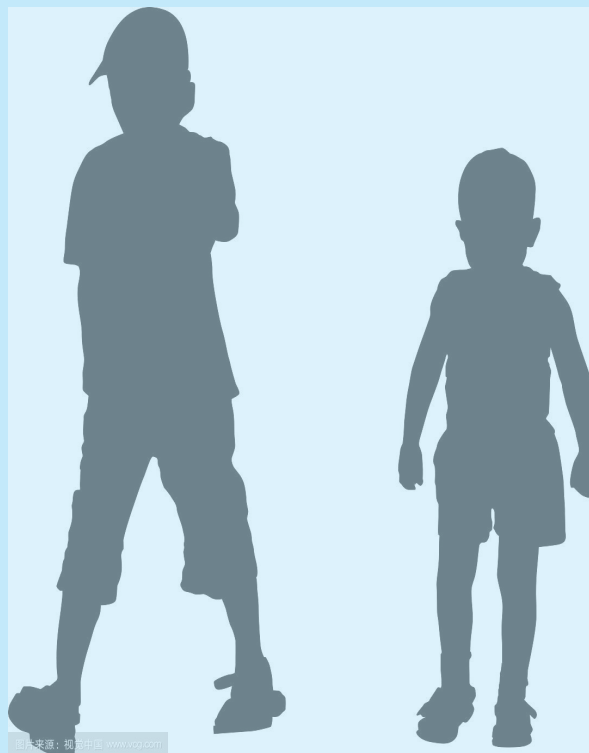
It's impossible, it's impossible. Edmund would tell me if his family was going to move. We are best friends. He would tell me and he would come back.

Therefore, I went to the library and waited for him every day until the early morning of the next day. But Edmund did not come, as if he had disappeared from my world overnight. Sometimes I even suspect that Edmund is just my second personality, but the necklace around my neck tells me that he did exist.

Without Edmund, I had no enthusiasm for investigating the passage. In the twinkling of an eye, May was coming and my birthday was coming. I was going to forget Edmund completely.

I've been crying on my birthday. I didn't know when God will use his magic to make me lose my childhood memory. I also began to resent Edmund for leaving me until I saw some people in white break into my house with guns. I couldn't find my parents. I started screaming for help, but no one answered. I ended up in a cage. They injected me with an unknown object, which made me sleepy and dizzy. In the last few seconds of waking up, I engraved Edmund's name on the palm of my hand with my fingernails. All the answers were solved at this moment, and I thought Edmund's disappearance was also due to it.

Then I became a man, a man who forgot his childhood.



# 3

Illustration Tiffany Liu  
Text Sailvan Xiang

## I.

窗外的雪还在下，大地白茫茫的一片。

屋内，我独自蜷缩在唯一的暖炉边上，望着眼前摇曳的火苗。

这已经是第三百零四天了吧。

整个世界只剩下了暴风雪肆虐的声音，以及隔壁房间墙角漏风的呼呼声。第一天是这样的，第一百天是这样的，那也许第一千天也不会有什么不同吧。

我缓缓地闭上了眼睛，脑海里浮现出上一次与家人一起出门时的场景。当时的天气还没有那么冷，还有很多人。有草地，有蓝天，有小动物，有小孩子的嬉闹声。虽然成年人的生活并不是那么如意，但至少喝到的咖啡是热的。我拿起了脚边的咖啡杯，抿了一口杯里勉强能被称之为咖啡的东西。极度的寒冷和苦涩在我的舌苔上蔓延，我皱了皱眉头，却突然意识到，我的眉头早就被冻僵了。

在这个世纪，网络是很美好的东西，人类文明的一切都储存在网络上。虽然公墓地早就已经人满为患，网络的无限空间却能容纳下地球上的每一个人。人们将自己生活的照片发到网上，把与他人的聊天记录保存在某个云盘里。互联网曾经给予了每个人存在过的证明，但是现在也无关紧要了。因为能浏览的人已经不存在了。

人类文明最后的遗迹化作电波，飘荡在无边无际的宇宙之中，等待着某个文明将其接收，然而人类对于这些文明来说又有任何接收的价值吗？我们在宇宙中太渺小了，没有人会理会一只蚂蚁临死前挣扎着发出的信号。人类花了几百万年成为了地球的霸主，用了几千年构建了一套复杂的社会体系，用了几十年登上了月球，而如今，这一切文明的最高成就都如同尘土一般飘散不见。

如果在过去，我一定会很伤心吧，但是在这个一切希望都早已被抹去的时代，一个已经消失的文明已经和我没有任何一点关系了。







Site  $\alpha$ ，是我在这片早已不属于我们的土地的最后一个家。抬起头，望着门上十字五芒星的标志，我想起了我迎接的上一个人类，也是我见到的最后一个人。

他当时就是从那个门跌跌撞撞地进来，倒在了不知所措的我身边。他身上的抗寒服早已破损不堪，生命维持装置显示着他已陷入各种低温症状3个小时了，而能活着到达site  $\alpha$ ，在某种意义上可以算是一个奇迹。

虽然电力已经所剩无几，我仍旧启动了急救装置。

我把他抬到了医疗台上，他无助地呻吟着，我想要安慰他，但又有什么话能安慰他呢？难道要说“你和我这是这个世界上活到最后的人类”？这时候他呻吟道：

“第二工程师杜瓦尔于Site  $\theta$  进行报告……Site  $\theta$  第三次疏散行动失败，没有，没有幸存者……”

我当时的想法是什么，我已经回忆不起来了。我只是呆立在那，注视着逐渐扩大的瞳孔。

“抱歉……”这是他最后的遗言。

也许他是在因为队友的死而过高不去，或者是因为他不得不将我孤独的留在这个世上而感到抱歉。但这一切都无所谓了，人类已经没有希望了。

一秒，两秒……

时间的流逝在这个小小的房间里已经失去了意义，但是对我来说，每一秒钟都在残酷地折磨着我的精神。

我已经不记得我是怎么将他的尸体装入防腐袋，抱着袋子，将他和其他死去的工程师们摆在一起的。恍惚之间，三百零四天过去了，

而我还活着。



## II.

没有人知道那场灾难究竟从何而起的。历史学家们声称那是基辅核爆的必然后果，但是社会学家们却认为这种毁灭性的灾难是有无数个细小事件堆积而成的。但是他们无论如何都无法否认的一个共识是，地球的生命已经所剩无几了。

这颗美丽的星球在宇宙中静静地度过了五十亿年的时光，无私的将她的资源馈赠于一切生物，并孕

育出了曾经一度辉煌灿烂的文明。可是她也是残忍的，当她阴晴不定，甚至不顾一切发怒的时候根本无暇顾及她所承载的文明。

从寒武纪到第四纪，无数的文明在地球上诞生。量子地质学家声称地球上达到人类文明繁荣程度的文明一共有三个，但都无一例外的灭亡了。

人类消失后，地球也许还会诞生出新的文明吧。

一亿年？两亿年？还要多久才会有新的生物登上月球？到时候他们的量子地质学家会发现人类留在月球上的痕迹吗？

我很想知道新的文明长什么样，他们是碳基生物吗？他们会说话吗？他们在灾难到来的时候会乘坐末日飞船逃跑吗？

但是这一切都离我太远了。

一亿年的时光能抹平任何生物存在过的印记。

在时间面前，我没有见证新生命的资格。

而那不可避免的命运终将降临到我身上，于死亡与孤独为伴，是我最后的归宿。

窗外的世界还是零下四十度，今天是第三百五十天。

END



## 引子，维度空间纪念馆：

一颗灰暗的行星上空，游客从穿梭机跳落至地面，微弱的引力下如同游鱼一般，轻灵而飘渺。随之他们向远方眺望，叽叽喳喳的声音也骤然停歇。还没等他们从震惊中反应过来，管理员为了完成指标急忙开始了解说工作。繁杂的话语中“轮回”这一词倒是激情了游客们的兴趣。

从行星时代到如今，这个纪念馆已经被发现上百 years 了，据说它是由高等文明所建，不断收集着宇宙中“人类”的文明资料。直到量子力学有所建树后才发现这些资料是散布在整个宇宙中的量子信息，在这里以符文的形式保留下来。

# 绿 洲

Phillip Chen

游客离开后，世界又陷入了寂静，纪念馆本身是颗矮行星，构造和轨道位置都与冥王星颇有些相似，在这里“太阳”和星星已经没什么区别了，给不到太多光与热，因此冰面让它笼罩上了一层“迷雾”。冰川搭建的水晶宫里矗立着无数块漆黑光滑的石碑，它们向四面八方纵深覆盖了整个星球，其中最高的能达到上万公里，每一次抬头就像在茂密的丛林之中，星空透过天蓬洒下了一丝微光。

— — • — —

播报：“1号石碑第189564270次轮回结束，189564271次开始”

“碑文有变化吗？”一位步履蹒跚的老者走向管理员。

“没什么变动，相比前189564269次，好像……多了一个笔画”

年轻的管理员含着烟头，抬头仰望了一番万丈石碑。

“您问这个干什么？1号碑每一次轮回都记录着生活的绝望，多一个，少一个笔画最终都会回到原点。”

“我问总是有原因的，我想看看他们对命运的抗争，即便只有一个笔画，也会是一首伟大的赞歌！”

老者的话貌似是管理员从未想到的方向，不过这又让他有些尴尬，于是不屑的说道：

“但我啊，只看到了文明的悲哀，量子物理的不确定性什么也没带给他们，在轮回中不断尝试，好像一切都是注定的命运。”

幽蓝色的量子符文依然在35亿个石碑上书写着过往，不像物质世界中坍塌，它们被永远留在了这里。

老者迟迟没有说话，反而打开了一本日记，纸笔在这个时代已经是被淘汰的古董，他却用斑驳的墨水在日记本上写下了如艺术般美妙蜿蜒的公式。沉思了一会后才向管理员娓娓道来：

“其实轮回并没有想象中的那么可怕，你看！”

悬浮的机器人扫描着笔记本上的公式，在石碑的间隔中用全息投影拉出了一道绚烂的长河，细看则是无数个代表概率的小光点。

蓝色概率云的茫茫大海中，一团亮紫色概率云慢慢出现，好似荧光藻类从深海浮出。这是截止到人类时间 2804 年的时间轴，两万年前智人诞生起，紫色概率云就缠绕蓝色的主轴，像是无数条线画了一个椭圆，有的随时间往前，有的则向后，但越靠近 2804 年就越收束，然后又变回一条蓝线。

“概率从发散到收束，难道这个文明毁灭了？”管理员猛的将烟头掐灭。

“你很聪明，人类确实在 2804 年毁灭了，但石碑上依旧更新着他们的生活，新的时间线也围绕着这两万年发散。”

“其实紫色概率云正是“轮回”的量子数据，它让人类活在了一个特定的时间区域内，不断重复着生活。即便宏观上已经毁于 2804 年的灾难，他们依旧在短短的两万年间创造历史。受限于某些定率，记忆无法保存，于是有人将这些信息洒向宇宙，让整个文明彻底生生不息。”

“可是难道一个注定回到原点的笔画也能叫创造历史？又或者您真的愿意活在历史之中？”

“孩子，不要用我们的认知去评价他们的智慧 [1]，谁知道会不会有一天轮回也成了我们活下去唯一的机会”

“我就不打扰你工作了，但既然在这，我希望你多看一眼这些碑文，所谓的“只能改变一笔一画”真的不可怕。其实理论上轮回是数学规律，一切都不可改变，但他们强大的意志已经足以干涉概率波生效才有了这小小的撇捺。先靠轮回“活下来”，再试图用生活塑造命运，用不屈找寻变数，也许几百年后来看这些石碑一切都会不一样了。”

老者摸着符文，那缕幽蓝色的微光透进了他的双眸，漆黑的瞳孔中划过了一颗文明的流星。

“所以说  
生命啊，  
它真的璀璨如歌”

# *Journal*

*"The pen is mightier than the sword."*

*--- Edward Bulwer*

# Plastic Pollution in the Pasig River


Lisa Li



When people look at this picture above, they must think of slum houses or some forgotten dump. However, this is a river that was once voted the dirtiest place on Earth. If you look closely, you can see that the garbage is actually floating on the surface of the water. This is the Pasig River in Manila, Philippines, which is the main river in Metro Manila that connects Laguna de Bay and Manila Bay. Plastic pollution, also called white pollution, is the main contributor to the catastrophic condition in Pasig River. As one of the major sources of plastic pollution in the world, Pasig River accounts for 21% of the organic trash that flows into Manila Bay (Lor). The river once provides food, subsistence, and transportation to the country is now regarded as the toilet of Manila. The geographic and social influences led to the degeneration of plastic pollution in the Pasig river which turned biologically dead in the end, and the government could create a plastic recycling system with the participation of residents in Manila to prevent further deterioration.

The vast amount of nondegradable plastics led to plastic pollution, but the factors contributing to the innumerable amount of plastics are population growth, geographical location, economic peak, and urbanization in Manila. Firstly, the rural residents have been forced to relocate to Metro


Manila in search of better employment possibilities due to the growing poverty in rural regions. The constant influx of people has led to overcrowding and the overuse of the city's water and land. The geographical location is also crucial, being the capital city of the Philippines and "the smallest area of the regions in the Philippines, Manila has the highest numbers of households (28% of the total) and manufacturing industries (46%)" (Gorme et al.). The increase in migration and high population density led to the production of an enormous quantity of waste and a large part of the waste ends up in rivers. The wastes have more chance to reach the ocean because the Philippines is an island country. Moreover, in 2008, Manila accounted for 4.6% of the total gross domestic product, and urbanization has expanded by more than 50% during the previous 20 years (Gorme et al.). This also means that the region's industry, culture, and politics are among the most prosperous in the country. With the explosion of the city's population and the rapid growth of industry and economy, the Pasig River was used to dump factory waste, household waste, and sewage. Lastly, as a developing country, people are forced to buy things like instant and cheap products because their wages are always restricted.



These products are packed in inexpensive, disposable plastic bags, which are typically disposed of as marine trash or in landfills, like Manila Bay. Since plastic is a polymer material that is hard to degrade in nature, it is not being degraded fast enough to keep up with the Manila people's production rate, so the only result is a flood of plastic waste on the Pasig River.

With people's addictiveness to plastic products, Manila had encountered severe environmental, social, economic, and health consequences. In the 90's, the Pasig River was declared as a biologically dead river (Cheema). The river was once a central place for entertainment, economic activities, transportation, and a source of food and livelihood as the geographical location made it an irreplaceable natural resource. Nevertheless, plastic pollution has totally changed the river in all aspects. It is now used as a dump by practically all nearby businesses as well as informal settlers who live along the river's banks and its tributaries. The Pasig River began to smell stinky, so people stopped using its water to wash their clothes and ferry traffic declined as well. In addition, many aquatic animals had been seriously affected. The Laguna de Bay and the Manila Bay were home to 25 distinct species of fish and 13 other aquatic organisms before pollution ruined the aquatic ecology. Yet, there are now just 6 fish species and 2 plant species that can survive in dirty water due to the blocked garbage and the severe lack of oxygen content (Gorme et al.). The plastic pollution will eventually affect the country's economy and living standards if no remedy action was taken.


In order to solve the problem of plastic pollution in the Pasig River, the Manila government can create a cycle of river plastic pollution control. The government and enterprises can work together to organize fishermen or nearby residents to recycle plastic waste. The recycled waste. The recycled plastic will be transferred to relevant enterprises for batch recycling and made into plastic products such as cell phone cases, and the income from the sale of the products will be returned to the fishermen who participate in plastic recycling. A QR code can be added to the products made from recycled plastic, and the QR code can be scanned to see the collector, transporter, and producer of the plastic used to make the product. This new model of a government-led, industry-corporate, public participate river plastic



pollution control system can attract the participation of more residents.

Residents can make money and help to solve the country's environmental crisis at the same time, which will give them a sense of accomplishment that they are doing something very worthwhile. The quality of the Pasig River can be addressed effectively and efficiently when the local people are involved in saving the river, and the effect of cooperation between residents and government agencies is doubled when compared to government or agencies working alone. While the problem of plastic pollution has been improved, the government still needs to continue to control the source of plastic waste and strengthen education on plastic pollution prevention. Solving plastic pollution problems is the responsibility of the entire population of Manila, but it all starts with overcoming the idea that you are too small to make a difference. The possibilities are endless, the sky is the limit.

The 27-kilometer Pasig River, which winds through the heavily populated Metro Manila dumps more than 63,000 tons of plastic waste into the ocean annually through Manila Bay (Enano). The Pasig River is now unable to function as a normal transportation hub, support aquatic creatures, and provide food and livelihood for residents. Such disasters are not entirely the fault of poor sanitation and the environmental care of local people. Manila's location makes it the commercial and industrial center of the country, so a large number of people want to settle down in this relatively prosperous city. The crowded population and massive amount of industrial waste accelerate the flood of plastic pollution on the river. The recycling system that turned the plastics into products again can be an immediate action government can take to mitigate the problem in the Pasig River. Water is the most crucial resource for humans since it is a vital component of all living organisms. The government and locals should work together to turn the river back to its pristine state as it is the most significant river in the Philippines.



# GOD IS THE VILLAIN

-Mike Chen G11 Eta

Stabbed by the Holy Lance made of evolutionary teachings and corruptive mass culture entwined, God falls down into a faithless world of cyberpunk industrialization and social inequity—this is the plagiaristic image modern high schoolers like to paint of the American 1920s. And it is false. Since the Divine Spirit acquires its life and power from the worship of the finite spirit, how could the Christian God be dead when Fundamentalist pamphlets such as *The Fundamentals: A Testimony* are in circulation, and a Pentecostalist student in Kansas is speaking in the tongues of the Holy Spirit? In *The Great Gatsby*, He is not dead. Rather, through the evocation of the theory of Consubstantiality and the Passion of Jesus Christ, and the symbolism of Doctor T.J. Eckleburg, God is portrayed as an aloof, apathetic, and displeased figure who is the underlying villain of this tragic story.

In *The Great Gatsby*, Gatsby's identification with Jesus and his subsequent tragedy testifies to God's apathy, His dying powers, and His villainous part in inducing Gatsby's death. In chapter six, Nick's account of Gatsby's birth establishes a connection between Gatsby, Jesus, and His Father -God.

Gatsby is declared to be "the son of God," a statement which is backed by an allusion—"he must be about His Father's business"—to Jesus's declaration of his independence from his biological parents found in the

Gospel of Luke, "I must be about my Father's business." Yet, in his self-invention, Gatsby is also God himself, as he "sprang from his platonic conception of himself." This statement signifies that Gatsby is at once father and son, which aligns with the Christian theory of Consubstantiality, declaring that the Father and the Son are one, sharing one substance.

Gatsby's identification with Jesus is further consolidated by the explicit evocation of the Passion of Christ before and at Gatsby's death. On the night before his death, Gatsby keeps his vigil in the Buchanan's garden, while Nick, his disciple, leaves him to go home to sleep. This calls to mind Jesus's vigil in the Garden of Gethsemane and how His disciples left Him alone to suffer. Immediately before his death, Gatsby is said to have "shouldered" the air mattress on which he was later killed. This specific wording parallels how Jesus "shouldered" His cross, upon which He was later crucified. Finally, at the scene of his death, the "red circle in the water" recalls how "blood and water" oozed from the side of Christ's body after He was stabbed by the Lance of Longinus, completing the parallelism.

However, this is where the fate of Jesus and Gatsby begins to defer. Whereas in Gospel,





the age of miracles had not ended in the 1920s, and God, if benevolent, could have revived Gatsby. Yet Gatsby, in substance one with God, was not revived. Thus, an apathetic, aloof, and graceless God whose powers are failing is portrayed as the underlying villain of Gatsby's death.

Beyond Gatsby, the symbolism of the eyes of Dr. T.J. Eckleburg and how George Wilson acts in God's name illustrates His malicious displeasure. Nick first dwells upon the eyes of Dr. T.J. Eckleburg in chapter two, where they are described to be "looking out with persistent glare" and "disembodied. The word "glare" evinces the face's malignance, while "disembodied" paints the visual with an extra layer of horror. These eyes did not appear again till chapter seven, where "over the ashheaps," they "kept their vigil" while Myrtle peered for Tom's car. Here, with the word "over" and the religious connotations of the word "vigil," the eyes of T.J. Eckleburg begin to emerge as the embodiment of a watcher of some higher power. Later, in chapter eight, as Wilson recounts the struggle between himself and Myrtle, he makes frequent invocations of God. Wilson is first quoted saying, "you may fool me, but you can't fool God." And as he catches the eyes of T.J. Eckleburg behind the window, he says, "God sees everything." Thus, the symbolism of the eyes of T.J. Eckleburg as God is established

Then, The Great Gatsby also establishes a complex relationship between God and Wilson, as although God does not dwell in Wilson (because he does not belong to any church), Wilson is acting in God's name. Wilson's "nod into the twilight" echoes Gatsby's watch of the green light, which signifies that they are believers in the same Christian God. In addition, since the eyes symbolize God, it should be noted that this "American God" hovers upon the valley of ashes, which is not only the site of moral failure but a miniature epitome of America in the

1920s, where dreams were preyed upon. Thus, all acts of atrocities against dreamers, of Wilson, of Tom and Daisy (Tom claimed Daisy to be Catholic as a pretext), are executed in the face of, and guided by, the omniscient, the omnipotent God, indicating how He is the villain lurking behind all tragedies of the story and the age.

In summary, Fitzgerald portrays God as the villain of The Great Gatsby through the identification of Gatsby as Jesus, and the symbolism of the eyes of Dr. T.J. Eckleburg and the actions performed in his name. Thus, not only is the Christian God not dead, he is committing evil. However, it should be kept in mind that the Divine Spirit acquires consciousness through the finite spirit, so God is as powerful, as good or evil, as his people. By this theory, the Christian God is just a concentrated epitome of the characteristics of His contemporary society. Hence, The Great Gatsby is still the tragedy of an age, an age of cyberpunk glory beating ever so steadily into its inevitable downtime.



# Global Concern of Poverty and Solutions



**25 December 2022**

**T**hroughout the development of human history, poverty exists in every region and society and has become the number one global concern that human face today. In recent years, the situation is dramatically changing for the worse after the outburst of COVID-19. 22% of the world's population, or 1.3 billion people, reside in 107 developing nations and experience poverty. Now, multidimensional measures of an individuals' status are more holistic than only calculating their income while determining poverty,

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*Tommy Tang*

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people assume that the economic status determines whether a family or individual are in poverty. However, the quality of life is also in consideration, including the quality of education, medical treatment and even shelter and food resources. Ultimately, an organization with a functional structure, Mentor leadership style and Goal-oriented climate are best suited to mitigate or even address the poverty issue.

A functional structure of an organization suits to mitigate poverty issue. This organization can be characterized as a structure in which functional departments are established to address business issues at various levels. The organization uses formal structure that divides itself into four

departments, the investigation, the planning, resource gathering and service department. First, the organization send its investigation group to a specific area to investigate and gather survey, by knowing the entirety of the situation. Then, they were sent to the planning department to make plans and goals according to the gathered information. After that, transferring to the resource department to collect and buy the necessities, whether through charity donation or other activities. Finally, the service department send the resource to the area of poverty to complete their mission. The advantages of function structures are operational speed and specialization. In the organization, every department focuses on their own work, they also are skilled at their own tasks which means that they finish the task with high quality and efficiency. The main goal of a functional structured organization is their operational speed, and speed is what the organization needs because the global concern of poverty is gradually leveling up in recent years, there is no time left to waste. World Vision, an organization that fight against poverty acquires functional structure, has successfully helped hundreds of places

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through 2021, the efficiency and quality could not be achieved without the help of this functional structure. Other organization types do not acquire both of the advantages at the same time. As a result, the functional structure is best suited to mitigate or even address the poverty issue.

The leadership style Mentor is best suited for a leader to acquire and brings in great advantages in addressing the poverty issue. A Mentor engages in the development of people through a caring and empathetic orientation. Especially

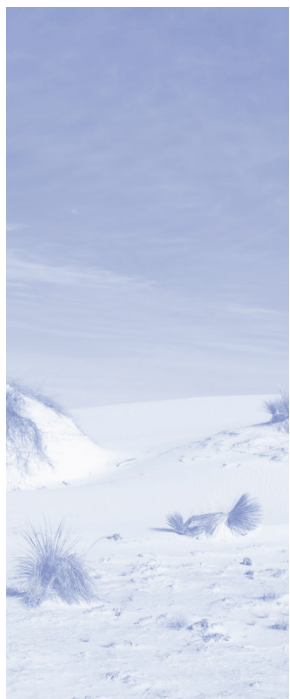


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in organization based on supporting and caring for the poor, this trait of leadership is perfect for the position. Not only persuading workers to work harder but also motivating workers based on their empathy and caring on saving the people in poverty. The goal of mentor leadership is to help people build on their abilities. It might be in a pretty limited approach, like developing a certain ability (Dungy 2018). While choosing the organization type as functional, one of the advantages is specialization, staffs are only assigned the work they are skilled at. This goal of mentor leader fits perfectly with functional organization by developing an individual's certain ability. As a result, the leader encourages his followers to focus more on their specialties, which leads to workers' abilities improve, then the efficiency of the organization improves, and finally leading the organization to success. Successful mentor leaders develop their followers into better athletes, employees, students, or members of the family—and finally, into better people . Mentors also see people as resources to be

developed. In other words, Mentors are able to pick more elite staffs and more talented workers. This will not only extend their organization human source of power but also their organization influence around the community. In all, the leadership style is best suited to address the issue.

Goal-oriented climate is best suited to mitigate or even address the poverty issue. A goal-oriented working climate is result driven, which means that workers and staffs are motivated by their purpose of doing the work. While in this situation, people apply for this organization because they show care and empathy for the people who suffer from poverty and they want to make a change by taking action. Clearly, their purpose is to help the poor and contribute to the society. Members in this





organization will not have any regret or complaints since all of their work is not useless, because goal-oriented climate reminds people of what their purpose is and that is contributing to the society and help the poor. A sense of self-mastery and concentration alignment are two additional benefits of goals. In the end, you can't measure what you can't manage, and you can't improve what you can't manage well, you may accomplish all of that and more by setting goals. Unlike other working climates that pays attention to the process and how workers feel, Goal-oriented climate automatically ignores the fact of what they care and the process because the workers who choose to work in the organization all already have a purpose. With this self-motivation goal set in their mind, a Goal-oriented working climate is the perfect fit. In conclusion, an organization with a functional structure, Mentor leadership style and Goal-oriented climate are best suited to mitigate or even address the poverty issue. Poverty is the top one global concerning issue today, and more and more people are passively moving into the category due to COVID, when families are in poverty, their children suffer immensely from not receiving good health care, food and education, which slowly results in the suffrage of generations. While the situation is severely worsening, it is time for leaders to stand up and create organizations to fight against poverty to build a better future.

# Rhetorical Devices Analysis

## ENGLISH LITERATURE

OMEGA



ANGELINA FANG

Kennedy launched his legendary inauguration address on a frosty day in 1961, calling both Americans and the splintered globe to face the common ethical obligation of mankind together. At that time, a robust civil rights movement on the inside and Cold War-era aggression on the outside were severely suppressing society as a whole. In a turbulent, fragmented age among superpowers, the whole world was navigating treacherous waters. Kennedy, as a liberal, issued an unprecedented battle call: he motivates on behalf of all of humanity to fight against the threat to liberty, equality, and civility in order to unite the continent and mankind to be one. Ultimately, Kennedy's use of rhetorical devices enhances his speech more compelling, thus successfully persuading the populace all to take a stand for peace.

First and foremost, the well-rounded appellations exhibited by anaphora endow Kennedy's potent charisma with majority agreement from the globe. By anaphora repetitively starting with "to": Kennedy swore allegiance "to those old allies" and guaranteed the collaboration can achieve anything; Kennedy promised the freedom "to those new states" excluding any forms of constriction; Kennedy proposed assistance to eliminate poverty "to those people in the huts and villages"; Kennedy reminds rejection to subversions "to [their] sister republics"; Kennedy advocates aids to new and weak "to sovereign states" (Kennedy). These remarks overtly draw attention to the listeners and give them a sense of accountability. More significantly, these parallel appellations speak to all demographics, including allies, the underprivileged, and adversaries,

demonstrating his inclusion by evolving from cordial friendliness to respectable aggression. Thus, Kennedy's argument is strengthened and rendered more compelling by the integration of the logos and the choice of poverty as the rationale.

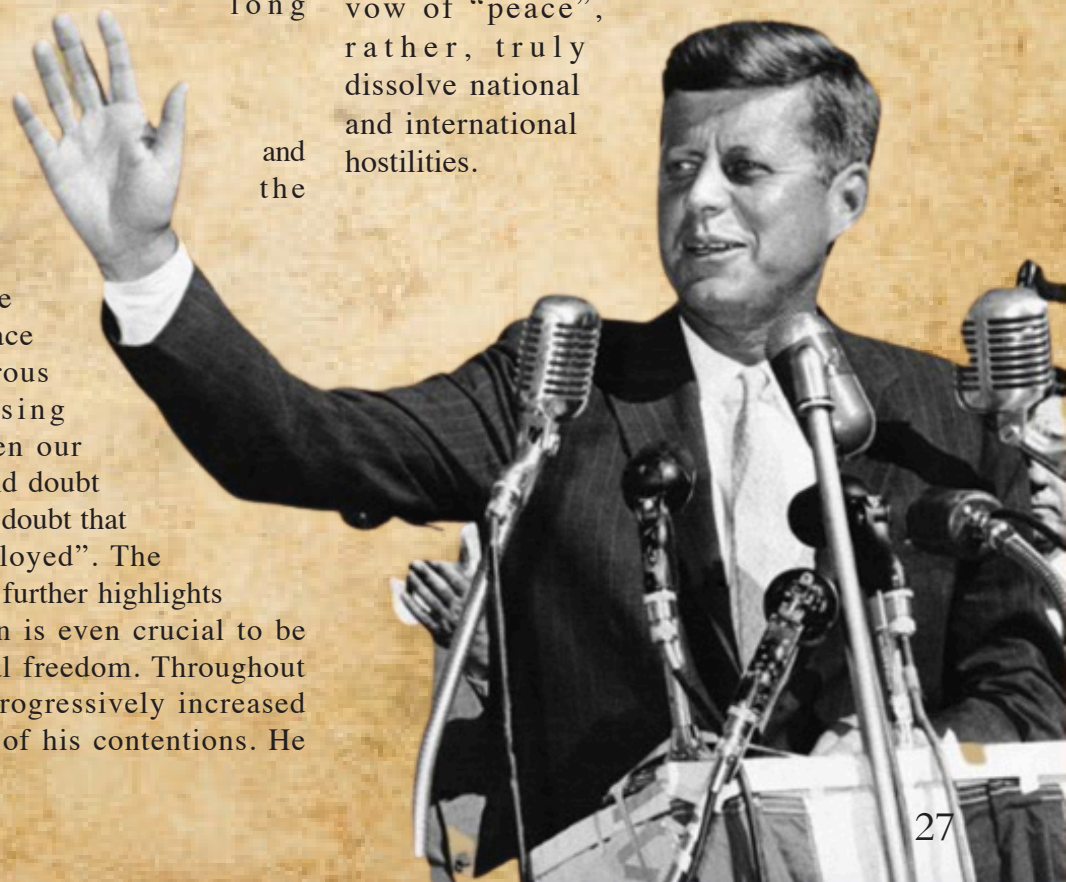
Besides that, Kennedy makes extensive use of antitheses throughout his speech to present the value of liberty and persuade the audience to join him. A solemn keynote was revealed when Kennedy poses three antitheses to manifest his righteous admonition of cooperative freedom. Kennedy denied in the first place that "today [is] a victory of party"; instead, he employed contradictory adjectives to indicate the profound necessity of freedom after revealing today is more of a gain of human rights rather than superficial political leverage. The comparison of "end" and "beginning" evinces Kennedy's determination to resolve conflicts including inequalities or international disputes amid the tense diplomatic challenges based on the great deeds of the previous thirty-four forebears. "Renewal" in comparison to "change" both foreshadowed Kennedy's implication that American liberty will not halt at domestic survival but be further devoted. Kennedy then continues to employ another antithesis to compel his audience to take concrete steps toward the shared cause of liberty. A stark outlook in liberalizing humanity as a whole, the decisive factor that renders his speech effective. parallel antithesis indicated Kennedy's committed belief in cooperation: "United, there is little we cannot do" while "divided, there is little we can do" (Kennedy). "United" compares to "divided" prompts the opposite situation that Kennedy

is going to discuss, and then, “can” in contrast to “cannot” elucidates the discrepancy between the two distinct decisions in cooperating, which reflects that the slight difference can even lead to great success. In this case, the antithesis serves as a potent convince of pragmatic actions, which makes the line less simply a repetitive tedium than a further disclosure of Kennedy’s outlook in liberalizing humanity as a whole, the decisive factor that renders his speech effective.

Furthermore, Kennedy utilizes repetitions to enlighten the capacity of mankind and instill a sense of mission in the masses, evincing a cogent impression. In the fourth sentence, Kennedy uses repetition to address the human potential hidden under turbulence. “The power to abolish all forms of human poverty and all forms of human life.” The double repetition of “human” especially emphasizes a sense of unity which embodies Kennedy’s intention to unite humans as a whole. In front of the common enemy, disparity, poverty, and belligerence, Kennedy used to word “power” to affirm human capability while also subtly denoting that it is everyone’s burden to fight against the shared enemies. Kennedy utilizes repetitions to establish the scene of a heated battlefield after intimating to human capacities in order to convey the urgency and accentuate the severity. It is “not as a call to bear arms, though arms we need: not as a call to battle, though embattled we are, but a call to bear the burden of a long twilight struggle” (Kennedy). The three repetitions of the word “call” and two repetitions of words “arms” and “battle” not only hint that everyone is a soldier on the battlefield for world peace but also amend a sonorous rhythm for an imposing atmosphere. “Only when our arms are sufficient beyond doubt can we be certain beyond doubt that they will be never employed”. The repeated “beyond doubt” further highlights the value of cooperation is even crucial to be superposed on individual freedom. Throughout his address, Kennedy progressively increased the intensity and scope of his contentions. He

concluded with the two aphorisms “ask what you can do for your nation” and “what collectively we can do for the freedom of man”, which are both infinitely catchy.

As a listener, what emerged in front of me is better a flexible metrical poem supported by powerful erudition than a stuffless assertion on human capability. Anaphora, antithesis, and repetition—three rhetorical techniques Kennedy used— cast his memorable Inaugural speech that effectively convinced the public of the significance of peace. By the form of anaphora, Kennedy’s words urging sacrifice to meet the challenges did arouse passions among Americans as well as people all over the world because he clearly addresses five populations in five paragraphs correspondingly. It signals his appeal to align all of humanity as an entirety and his genuine hope for peace in the nuclear age. Following that, Kennedy deploys antithesis to depict a cooperative bright future in front of the audience, in which strongly persuades all to contrive for liberalizing peace. Finally, Kennedy’s repetition underscores that everyone has a responsibility to contribute toward peace under the scenario of the battlefield and underlines again that the act of moving toward peace is imperative. Not only Kennedy’s genuine enthusiasm enables him to win fervent support among young Americans but also the robust usage of rhetorical appeals to achieve more than a token vow of “peace”, rather, truly dissolve national and international hostilities.



# *Science Lab*

*"Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world."  
--- Louis Pasteur*



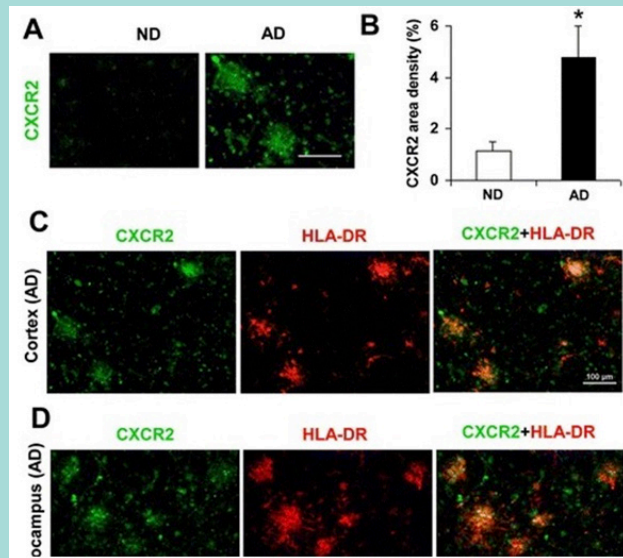
# 阿尔兹海默症的预防与未来的治疗

Jacklyn

遗传性的基因随着上一代传递给后代，是我们日常生活中无法预防的。阿尔兹海默症的后天成因多种多样，其中我们已知：衰老，是阿尔兹海默症的一个危险因素。而衰老有时伴随着基因突变 (genetic mutation) 和氧化损伤 (oxidative damage) 这两个阿尔兹海默症的致病因素。

氧化损伤和其他的致病因素例如毒性效应 (toxicity)，炎症效应 (inflammation) 和心脑血管疾病 (cardiovascular and cerebrovascular diseases) 都是我们日常可以进行有效预防的。

我们主要从日常生活的饮食，物质接触和作息节律等方面来说。



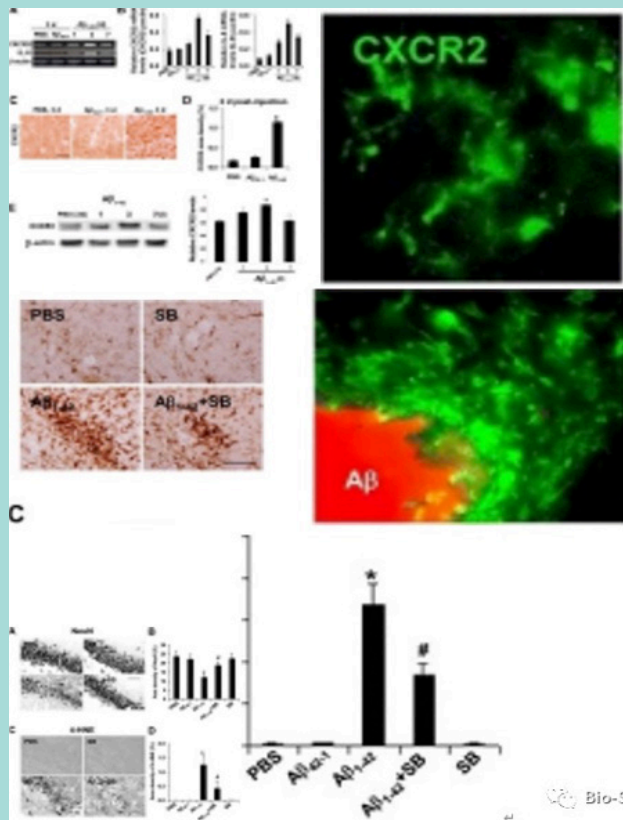
## 饮食

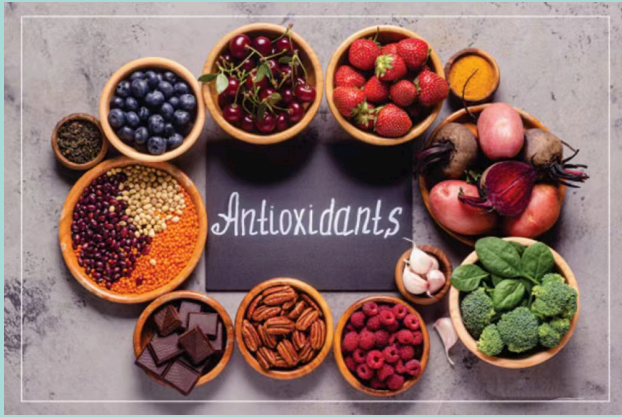
我们要尽量有选择性的选择更天然，来源更可靠的食物：

随着人类社会的飞速发展，污染问题已经成为了难以解决的人类社会的大问题，各种污染物随着洋流等方式扩散到地球的每个角落，而污染物进入一些动物体内，随着食物链的生物富集作用进入并堆积在更多动物体内。

例如早期人们广泛使用的 DDT 农药就在全球范围内形成了污染，现在随着各种传播方式在全球范围内仍在许多动物身上检测出有 DDT 的残留，而这种农药就随着餐桌等进入人体，日积月累，对人的神经系统产生危害。

其中塑料制品的滥用更是让塑料微粒散布全球，每天我们通过接触和饮食等让不计其数的塑料微粒进入体内，人体可能将一些分解形成毒素，堆积在人体内。所以，我们可以选择包装更环保，来源更有机，天然的食物。





例如：有有机认证的食品。在餐馆可以少用或不用一次性塑料餐具，自带餐具等与此同时，我们也可以多食用抗氧化的食品。我们日常食用的新鲜水果蔬菜中含有丰富的抗氧化营养素，只要掌握科学方法，保护其在烹调中不被破坏，就能达到延缓衰老的目的。

## 日常接触

日常生活中尽量少或不接触洗涤剂、农药等化学制剂以及有毒物质：

我们所知的大部分洗涤剂里面都含有氯化物，烃类物质、荧光剂，漂白剂等，这些类物质进入人体后难以被血液自净，从而在身体内累积，经常接触这类化合物会对人的神经系统、免疫系统各个系统产生毒性 (toxicity)；而生活中的许多杀虫剂 (pesticide)，芳香剂等化学制剂通常都含有大量的人工合成的芳香物质，吸入一定量会对人的神经系统等产生危害，有的甚至会成为血管性痴呆 (vascular dementia) 的成因之一。

我们日常还要注意生活环境周围的水污染、土地污染和空气污染等问题，例如小区附近是否有垃圾站，电子垃圾场等，有害物质 (hazardous substance) 会以各种形式弥漫在土壤，空气，水里面。



毒性效应还包括一些药物的错误使用。生病时要谨慎用药，平时要谨慎服用补剂：

随着医药科技的发展，人们更加依赖于药物来治疗大大小小的疾病，其中的许多药物在人体内发挥其治疗效果的同时有一定的副作用 (side effect)，例如下图所示的这些药物，都对人体的神经、血液等系统产生一定的危害。服用不当将会成为神经系统和血液系统等疾病的诱因。我们在日常生活中，要多食用天然食品，以人体习惯的方式补充营养，要充分发挥人体自身的免疫功能 (immunologic function)。

可诱发痴呆的药物		主要表现
抑酸剂	西咪替丁	可引起谵妄、智力损伤、昏睡等
抗酸药	铝剂	铝剂具有神经毒性，可诱发或加重痴呆
降压药	利血平、 甲基多巴 可乐定	通过消耗中枢的去甲肾上腺素和 5-羟色胺而引起嗜睡、疲惫、精神抑郁等反应，使神经功能低下
强心甙	洋地黄	可引起视力障碍、定位错觉、智力下降
抗哮喘药	氨茶碱	可诱发抑郁、精神错乱病。
解热镇痛药	吲哚美辛 喷他佐辛	可引起感情淡漠、妄想和精神错乱等
维生素类	维生素 D (过量)	过多服用维生素 D 可加重痴呆患者的意识障碍
镇静催眠药	利眠宁、 巴比妥类	长期服用可引起老年性痴呆症状
抗震颤麻痹药	苯海索	用药时间过长，可降低记忆和定向能力
抗癫痫药	苯妥英钠 卡马西平	可抑制神经膜的电传导，过量或用药时间过长会使智力下降
抗焦虑药	地西洋等	苯二氮卓类可诱发严重的记忆力减退
三环类抗抑郁药	丙米嗪、 阿米替林	可引起幻觉和精神错乱，有诱发患者痴呆表现。

## 生活作息

我们要养成良好的生活习惯：

作息尽量规律，睡觉和起床时间控制在一个范围内；要饮食营养均衡，注意补充坚果类优质油脂；要适当锻炼，根据自身情况选择合适的运动，不仅有助于减少身体氧化反应产生的自由基类物质 (free radical substance) 的沉淀沉积，减少身体的氧化效应，减缓机体衰老，还能锻炼神经协调能力 (nerve coordination ability)。

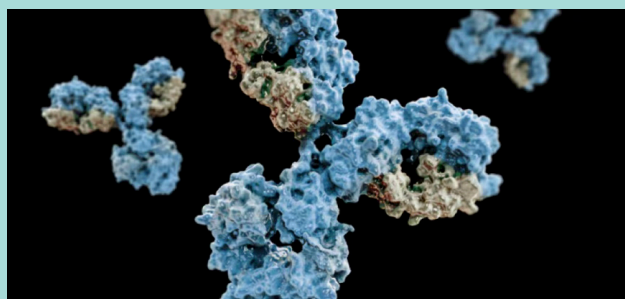
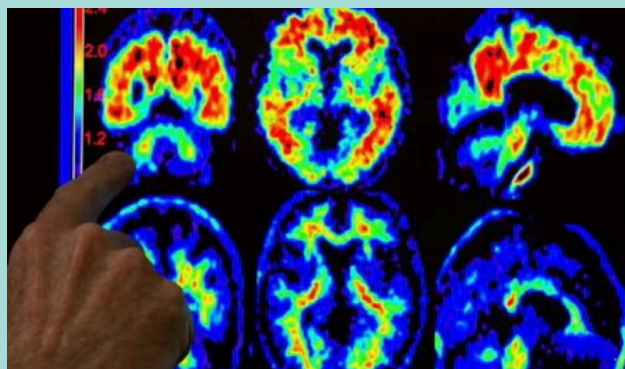
情绪不要过度的激烈，懂得心理疏导，通过心理上的“锻炼”，达到由内心主观协调到人体调节的作用，保证身心的健康。

## 阿尔兹海默症：未来的治疗

人们一直以来对阿尔兹海默症的重视程度都只增不减，世界上现在也有很多科学工作者在研究如何治疗阿尔兹海默症，我们从众多有展望性的治疗方法中选取了两条：

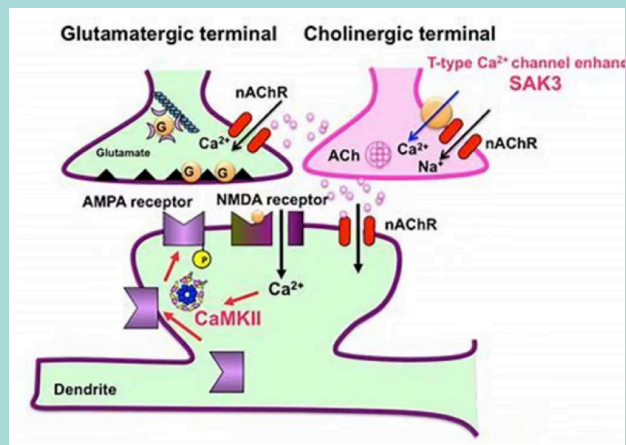
### 超声波 + 抗体疗法

研究者发现，仅利用超声波就能够清除毒性的 tau 蛋白聚集体，而将超声波同抗体疗法结合后就能够更加有效地清除蛋白聚集体，并且降低小鼠阿尔兹海默病的症状，联合疗法的效率明显高于单一疗法的效率。



### SAK3（药物治疗）

一种名为 SAK3 的药物或许能够有效治疗阿尔兹海默病。SAK3 能够通过激活记忆分子 CaMKII，来刺激大脑中的乙酰胆碱释放并且改善大脑的认知功能。这可能是首个能预防轻度至中度阿尔兹海默病的发生的修饰化药物。



2020 年，全球有超过 5000 万人患有痴呆症。这个数字几乎每 20 年翻一番，2030 年达到 8200 万，2050 年达到 1.52 亿。大部分增长将来自发展中国家。已经有 60% 的痴呆症患者生活在中低收入国家，但到 2050 年，这一比例将上升到 71%。这些数字是根据现有最佳证据估算的。

阿尔兹海默症的相关预防和治疗的  
路还有很长 .....

## References

Guerchet, Maëlen, et al. "Adi - Numbers of People with Dementia Worldwide." Alzheimer's Disease International (ADI), Alzheimer's Disease International, 30 Nov. 2020, <https://www.alzint.org/resource/numbers-of-people-with-dementia-worldwide/>.

李永红." 延缓衰老补充抗氧化营养素 " 医药养生保健报 2007-10-01,001.D'Angelo, Stefania, and Roberta Rosa. "Oxidative stress and sport performance." Sport Science 13.Suppl 1 (2020): 18-22.

# Minimum Wage, Financial Development and Labor Productivity

By Lien Fang

## 1 Abstract:

An empirical study based on the samples of A-share listed companies in China from 2012 to 2019 shows that the increase of minimum wage has significantly improved the labor productivity of enterprises, and for the regions with higher financial development level, the effect of the increase of minimum wage on improving the labor productivity is smaller.

### 1. 1 Introduction

Labor productivity is a key indicator of enterprise performance and a critical driving force for short-term output and employment growth as well as economic prosperity. Huge gaps exist in labor productivity among countries, which has become an urgent concern. Worldwide, it is common for governments to establish a minimum wage system to protect the rights and interests of workers and the right to legal labor remuneration. Existing studies mainly focus on the impact of the minimum wage on worker employment, wages, profits, technology choices and other aspects (Álvarez & Fuentes, 2018; Duanmu et al., 2022).

This current paper concentrates on how financial development affects the relationship between minimum wage and labor productivity. Previous research shows that minimum wage system is conducive to the improvement of labor productivity, both at the enterprise level and the overall economic level (Acharya et al., 2013). Based on the empirical research of the samples of A-share listed companies in China between 2012 and 2019, this paper demonstrates that the growth of the minimum wage significantly improves labor productivity of enterprises through such ways as increasing worker motivation, promoting the accumulation of human capital and improving the allocation of resources and other positive effects. For regions with higher financial development, the smaller the financing constraints faced by enterprises on average, the smaller the effect of minimum wage growth on improving labor productivity. The reason is that regions with more advanced financial development are more likely to replace labor with capital. The lower the level of financial development, the more limited the role of finance is in improving capital allocation efficiency. The increase of the minimum wage leads to the exit of more low-efficiency enterprises, and the reduction of inefficient competition helps surviving enterprises improve their labor productivity.

Compared with Western economies, China's minimum wage system started late. Due to different economic developments across regions, the minimum wage standards and the frequencies of adjustment vary across different provinces.

## 2 Literature Review and Theoretical Hypotheses:

### 2.1 Impact of Minimum Wage on Labor Productivity

The minimum wage protection encourages workers to work harder, and higher salaries motivate higher activity and productivity. Compared with other workplaces, a higher salary attracts applicants with more experience and higher motivation. As far as the mechanism is well designed,

higher minimum wage can achieve a win-win situation for both employers and employees. That means, employees can get higher pay when the average labor cost of employers is the same or slightly higher (Owens & Kagel, 2010).

The minimum wage protection is conducive for the accumulation of human capital. It reduces wage competition between low-paid enterprises and the turnover rate of restaurant workers (Dube et al., 2016). A British research finds that the introduction of the minimum wage has elevated labor productivity across all British low-paid sections (Croucher & Rizov, 2012). Besides, minimum wage protection helps reduce the turnover rate of young people and people with poor education background (Portugal & Cardoso, 2006). Having a relatively stable and long-term job is beneficial for employees to accumulate experience and enhance their skills.

*Hypothesis 1: Keeping other conditions unchanged, the minimum wage is conducive to improving labor productivity.*

## 2.2 The Regulatory Effect of Financial Development on Minimum Wage and Labor Productivity

Financial development plays an important role in easing financing constraints, promoting technology choices and enhancing the development of the private sector, constituting a regulatory factor that affects the relationship between the minimum wage and labor productivity. The interaction between the labor market and financial institutions has an important impact on employment and labor force participation rate. The elevation of minimum wage enhances the cost of dismissal, making it difficult for enterprises to rapidly reduce the number of employees through layoffs, thus affecting the flexibility of operation and production. Financial development mitigates the dependence of enterprises on internal resources and thus reduces the impact of labor costs (Hau et al., 2020). The flexibility of labor force will in turn promote employment and lift productivity.

*Hypothesis 2-a: Financial development has a positive regulatory effect on the relationship between minimum wage and labor productivity.*

But on the other hand, the financial market might form a replacing effect on the labor market. The higher the level of financial development, the more likely it is to replace labor with capital and adopt more capital-intensive production technologies. In regions with lower financial development, the elevation of minimum wage forces more low-efficiency enterprises to exit as they find it hard to get financial support.

*Hypothesis 2-b: Financial development has a negative regulatory effect on the relationship between minimum wage and labor productivity.*

## 3 Research Design:

This paper uses the samples of China's A-share listed companies between 2012 and 2019, which is sourced from the Wind Economic Database. The definition, measurement method and data source of relevant variables are:

- (1) Labor productivity. i.e. output per worker. In the benchmark model, the logarithm of per capita operating income (LP1) is used as an indicator to measure labor productivity.
- (2) Minimum wage standard. This paper takes the logarithmic value of the monthly minimum wage standard of each province in China (lnminwage) as the core explanatory variable.

(3) Financial development level.  $\ln fin_1$  is the logarithm of the balance of RMB loans of financial institutions at the end of the year, and  $\ln fin_2$  is the logarithm of the ratio of the balance of RMB loans of financial institutions at the end of the year to the current price of GDP.

(4) Other control variables. The control variables at the enterprise level include: enterprise age ( $\ln AGE$ ), enterprise size ( $\ln SIZE$ ), LEVERAGE (i.e. asset-liability ratio); STATE and FOREIGN are dummy variables which measure whether the company is state-owned or foreign funded. The control variables at the regional level include: economic development level ( $\ln GDP$ ), the degree of openness to the outside world ( $\ln FDI$ ), the financial support, characterized by the logarithm of science and technology expenditure ( $\ln TECexp$ ) and the logarithm of education expenditure ( $\ln EDUexp$ ), information technology level ( $\ln INTER$ ) and population size ( $\ln POPU$ ).

### 3.2 Model Settings

To verify Hypothesis 1, that is, to examine the relationship between the minimum wage and enterprise labor productivity, the model is set as follows:

(1)

$$\begin{aligned}
 LP_{it} = & \alpha_0 + \alpha_1 \ln minwage_{pt} + \alpha_2 \ln fin_{ct} + \alpha_3 \ln AGE_{it} + \alpha_4 \ln SIZE_{it} \\
 & + \alpha_5 LEVERAGE_{it} + \alpha_6 STATE_{it} + \alpha_7 FOREIGN_{it} + \alpha_8 \ln GDP_{ct} \\
 & + \alpha_9 \ln FDI_{ct} + \alpha_{10} \ln TECexp_{ct} + \alpha_{11} \ln EDUexp_{ct} + \alpha_{12} \ln INTER_{ct} \\
 & + \alpha_{13} \ln POPU_{ct} + \mu_i + \nu_t + \varepsilon_{it}
 \end{aligned}$$

Where  $i$  represents enterprise,  $t$  the year,  $p$  the province,  $c$  city; controls individual fixed effect and controls the time fixed effect;  $\varepsilon_{it}$  is the residual term,  $LP$  the labor productivity of the explained variable,  $\ln minwage$  is the logarithm of the monthly minimum wage standard of each province, measures the financial development level of each prefecture-level city, and the other control variables have been defined above. The coefficient describes the relationship between the minimum wage and enterprise labor productivity.

In order to test Hypothesis 2, that is, to examine the regulatory effect of financial development on the relationship between minimum wage and enterprise labor productivity, the interaction terms of  $\ln minwage$  and  $\ln fin$  are added to the model:

(2)

$$\begin{aligned}
 LP_{it} = & \beta_0 + \beta_1 \ln minwage_{pt} + \beta_2 \ln fin_{ct} + \beta_3 \ln minwage_{it} * \ln fin_{it} \\
 & + \beta_4 \ln AGE_{it} + \beta_5 \ln SIZE_{it} + \beta_6 LEVERAGE_{it} + \beta_7 STATE_{it} \\
 & + \beta_8 FOREIGN_{it} + \beta_9 \ln GDP_{ct} + \beta_{10} \ln FDI_{ct} + \beta_{11} \ln TECexp_{ct} \\
 & + \beta_{12} \ln EDUexp_{ct} + \beta_{13} \ln INTER_{ct} + \beta_{14} \ln POPU_{ct} + \mu_i + \nu_t + \varepsilon_{it}
 \end{aligned}$$

where  $\beta_3$  is a coefficient to be highlighted. If  $\beta_3$  is significantly positive, Hypothesis 2-a is verified; on the other hand, if  $\beta_3$  is significantly negative, Hypothesis 2-b is verified.

# 4 Empirical Analysis

## 4.1 Benchmark Regression

As shown in the following table, the regression in Table 2 takes LP1 as the explained variable and lnminwage as the core explanatory variable. Column (1) is a univariate model, column (2) further controls the individual fixed effect and time fixed effect, and column (3) goes on to add control variables at the enterprise level and prefecture-level city level. Column (3) shows that the estimated coefficient is significantly positive, and Hypothesis 1 is thus verified.

In column (4) an interaction term lnminwage\_lfin1 is added. The estimated coefficient is significantly positive, and Hypothesis 2-b is thus verified.

Table 2 Minimum Wage, Financial Development and Labor Productivity

	(1)	(2)	(3)	(4)
	lp1	lp1	lp1	lp1
lnminwage	0.5086*** (18.9301)	0.1732*** (3.0201)	0.2282*** (3.7037)	0.9911*** (3.5445)
lnfin1	0.0462*** (14.2882)	0.0077*** (2.8484)	0.0033 (0.2944)	0.2995*** (2.6938)
lnminwage lnfin1				-0.0413*** (-2.6789)
lnAGE			-0.0120 (-0.3669)	-0.0117 (-0.3585)
lnSIZE			0.1677*** (13.6740)	0.1682*** (13.7054)
LEVERAGE			0.0002 (0.7687)	0.0002 (0.7735)
STATE			0.1340*** (4.4567)	0.1351*** (4.4884)
FOREIGN			0.0025 (0.0421)	0.0034 (0.0578)
lnGDP			0.0011 (0.0654)	0.0228 (1.2882)
lnFDI			-0.0050 (-1.4136)	-0.0048 (-1.3639)
lnTECexp			0.0063 (1.2052)	0.0007 (0.1296)
lnEDUexp			0.0045 (0.4915)	0.0122 (1.2648)
lnINTER			0.0013 (0.1433)	-0.0073 (-0.8512)
lnPOPU			0.0064 (0.8258)	0.0051 (0.6572)
cons	9.1274*** (48.0666)	12.1128*** (29.3185)	8.1710*** (16.6323)	2.5335 (1.2185)
Firm fe	No	Yes	Yes	Yes
Year fe	No	Yes	Yes	Yes
N	34196	34196	28011	28011

## 4.2 Robustness Test

To testify the robustness of the conclusion, the logarithmic value of the ratio of the balance of RMB loans of financial institutions at the end of the year to the current price of GDP (lnfin2) is used as the core explanatory variable. As shown in Table 3, column (1) is a univariable model, column (2) further controls the individual fixed effect and time fixed effect, column (3) adds the control variables at both enterprise and prefecture city levels, and column (4) supplements the interaction item lnminwage\_lfin1. We have here a significantly positive estimated coefficient, which verifies Hypothesis 1. The estimated coefficient of the interaction term in column (4) is significantly negative, which verifies Hypothesis 2-b and is consistent with the estimated result of the benchmark regression.

Table 3 Robustness Test

	(1)	(2)	(3)	(4)
	lp1	lp1	lp1	lp1
lnminwage	0.5579*** (19.6865)	0.1817*** (2.9646)	0.2282*** (3.7037)	1.0092** (2.3362)
lnfin2	0.1446*** (12.9404)	0.0156* (1.8634)	0.0033 (0.2944)	0.6065* (1.7955)
lnminwage_lfin2				-0.0830* (-1.7887)
lnAGE			-0.0120 (-0.3669)	-0.0118 (-0.3597)
lnSIZE			0.1677*** (13.6740)	0.1679*** (13.6793)
LEVERAGE			0.0002 (0.7687)	0.0002 (0.7717)
STATE			0.1340*** (4.4567)	0.1341*** (4.4556)
FOREIGN			0.0025 (0.0421)	0.0024 (0.0404)
lnGDP			0.0045 (0.3686)	0.0138 (1.1849)
lnFDI			-0.0050 (-1.4136)	-0.0059 (-1.6334)
lnTECexp			0.0063 (1.2052)	0.0028 (0.5222)
lnEDUexp			0.0045 (0.4915)	0.0102 (1.0511)
lnINTER			0.0013 (0.1433)	-0.0040 (-0.4724)
lnPOPU			0.0064 (0.8258)	0.0059 (0.7504)
_cons	8.2225*** (39.8959)	12.0463*** (27.4264)	8.1710*** (16.6323)	2.4227 (0.7592)
Firm fe	No	Yes	Yes	Yes
Year fe	No	Yes	Yes	Yes
N	29010	29010	28011	28011



## 5 Conclusion

This empirical research based on the samples of China's A-share listed companies from 2012 to 2019 shows that the growth of minimum wage significantly improves labor productivity for enterprises, and for regions with more advanced financial development, the effect of the growth of minimum wage on improving labor productivity is smaller. Regions with higher financial development tend to adopt more capital-intensive production technologies; the lower the level of financial development, the more limited the role of finance in improving the efficiency of capital allocation.

Our research demonstrates that there may be a potential substitution relation between the financial market and the labor market. For regions with relatively low financial development, raising the minimum wage can lay a role in elevating labor productivity. This offers policy makers a substantial reason to prioritize the protection of labor force in financially backward areas.

## Bibliography

Acharya, V. V., Baghai, R. P. and Subramanian, K. V., 2013, "*Labor Laws and Innovation*", Journal of Law and Economics, 56(4): 997-1037.

álvarez, R. and Fuentes, R., 2018, "*Minimum Wage and Productivity: Evidence From Chilean Manufacturing Plants*", Economic Development and Cultural Change, 67(1): 193-224.

Croucher, R. and Rizov, M., 2012, "*The Impact of the National Minimum Wage On Labour Productivity in Britain*", E-Journal of International and Comparative Labour Studies, 1(3-4): 263-289.

Du, P., Zheng, Y. and Wang, S., 2022, "*The Minimum Wage and the Financialization of Firms: Evidence From China*", China Economic Review, 76: 101870.

Duanmu, J., Norbäck, P., Lu, J. W. and Clegg, J., 2022, "*Contraction Under Minimum Wages? Operational and Financial Advantages of Multinational Subsidiaries in China*", International Business Review, 31(2): 101936.

Dube, A., Lester, T. W. and Reich, M., 2016, "*Minimum Wage Shocks, Employment Flows, and Labor Market Frictions*", Journal of Labor Economics, 34(3): 663-704.

Garmaise, M. J., 2008, "*Production in Entrepreneurial Firms: The Effects of Financial Constraints On Labor and Capital*", The Review of Financial Studies, 21(2): 543-577.

Hau, H., Huang, Y. and Wang, G., 2020, "*Firm Response to Competitive Shocks: Evidence From China's Minimum Wage Policy*", The Review of Economic Studies, 87(6): 2639-2671.

Li, J., Shan, Y., Tian, G. and Hao, X., 2020, "*Labor Cost, Government Intervention, and Corporate Innovation: Evidence From China*", Journal of Corporate Finance, (64): 101668.

Long, C. and Yang, J., 2016, "*How Do Firms Respond to Minimum Wage Regulation in China? Evidence From Chinese Private Firms*", China Economic Review, 38: 267-284.

Mayneris, F., Poncet, S. and Zhang, T., 2014, "*The Cleansing Effect of Minimum Wage: Minimum Wage Rules, Firm Dynamics and Aggregate Productivity in China*", Cepii.

Owens and Kagel, 2010, "*Minimum Wage Restrictions and Employee Effort in Incomplete Labor Markets: An Experimental Investigation*", Journal of Economic Behavior & Organization, (73): 317-326.

Portugal, P. and Cardoso, A. R., 2006, "*Disentangling the Minimum Wage Puzzle: An Analysis of Worker Accessions and Separations*", Journal of the European Economic Association, 4(5): 988-1013.



# 脑科学科普

## 神经元与神经胶质细胞

Neurons and glial cells

### 引用

《神经科学：探索脑》，《Brain Facts》

文字：Andy

插图：Jacklyn

LEADING AUTHOR: Andy Qian / Jacklyn Dong



脑科学是关于脑的结构与功能的科学,也是对神经系统的研究。要了解这一门学科,我们必须从构成神经系统 and 大脑的细胞,神经元与神经胶质细胞开始说起。

## 神经元 Neurons

人类大脑中有10的12次方个神经元,是所有脑细胞的10%。神经系统的大部分功能都是由神经元执行的,包括感知环境变化、与其他神经元之间的信息传递、指挥身体对环境变化的反应。

### 神经元的结构

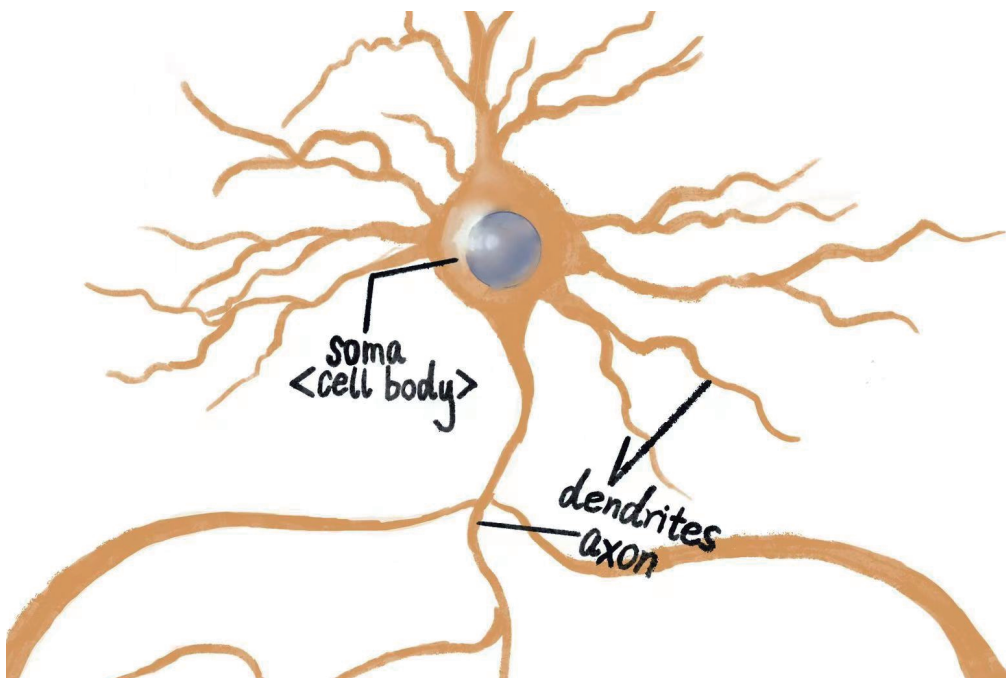
神经元有不同的形状、大小和化学成分,但是他们的结构是相同的。

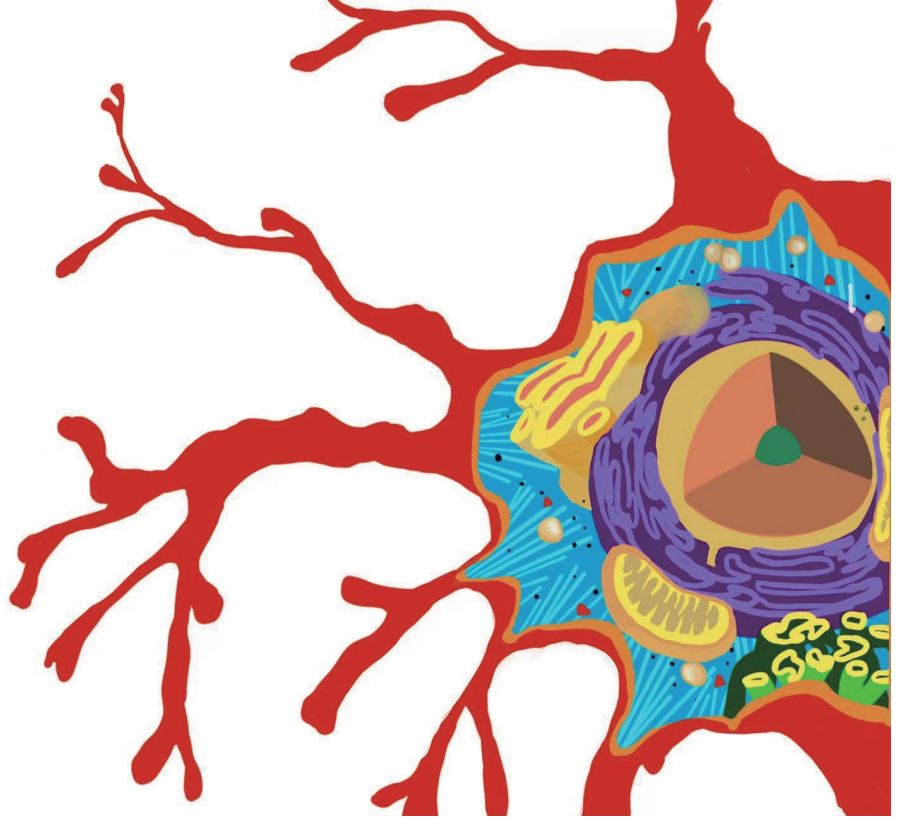
神经元的结构包括:

■ 胞体Soma/Cell body ■ 树突Dendrite ■ 轴突Axon

其中胞体和树突被称为神经核团和和灰质,而轴突被称作纤维束和白质。

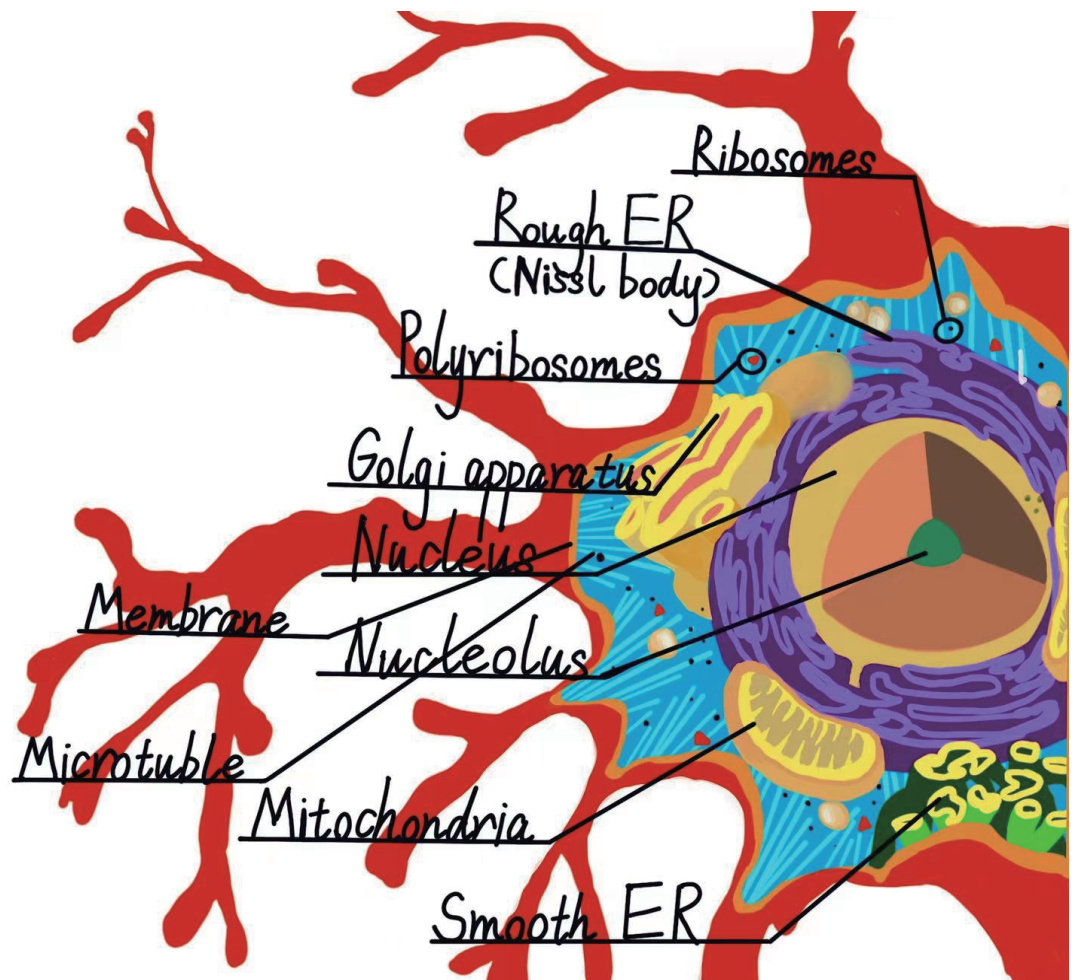
神经元内外由神经元膜区分,胞体、树突、轴突膜的蛋白组成均不同。





## 胞体 Soma

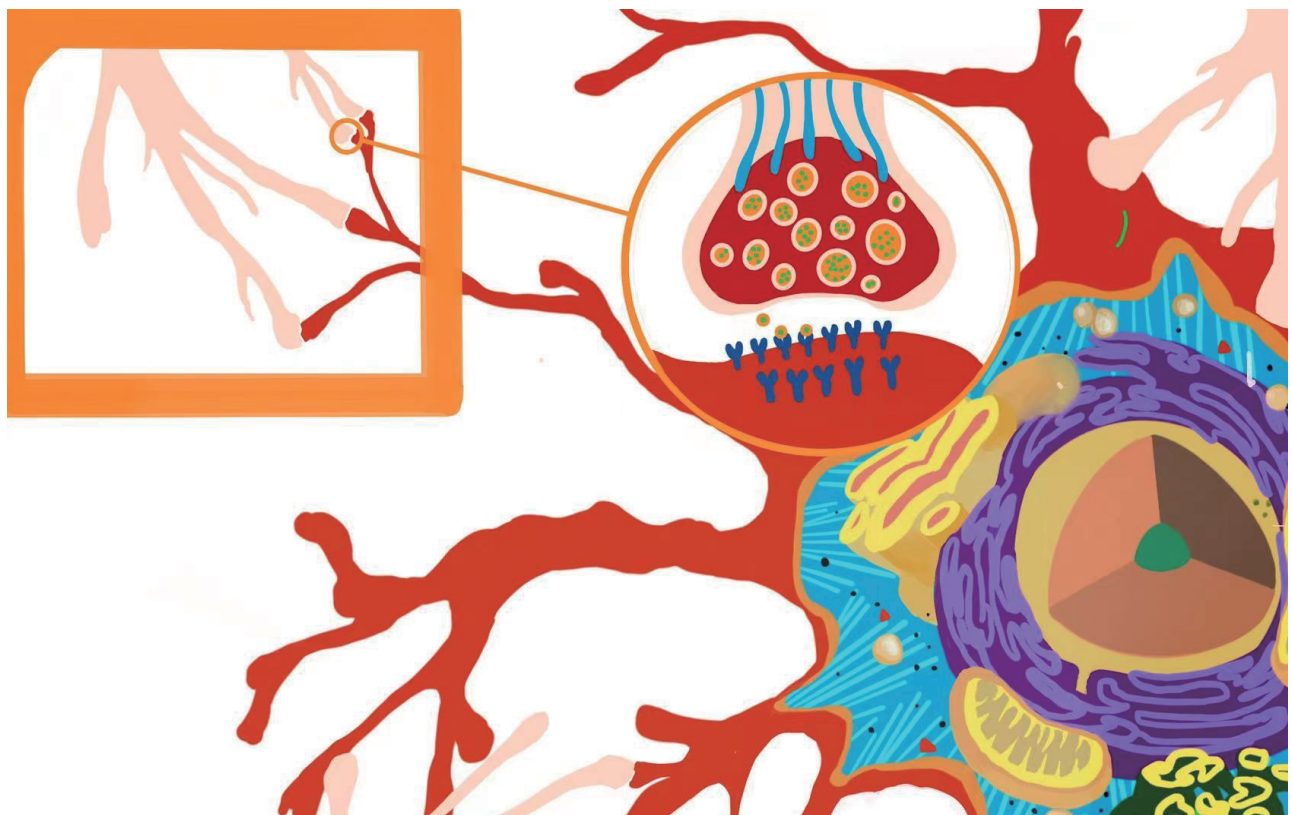
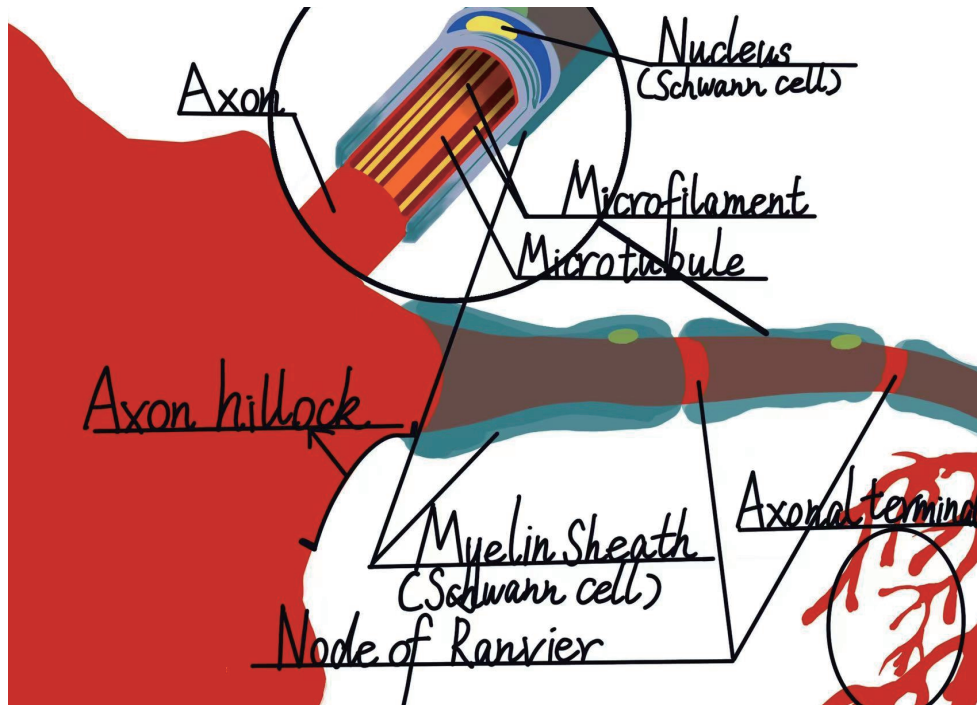
我们先从胞体开始说起，胞体在神经元的中心，直径大约 $20\mu\text{m}$ 。胞体中含有神经元的细胞器，和所有其他的动物细胞一样。包括细胞核、粗面内质网、滑面内质网、高尔基器和线粒体等。



## 轴突 Axon

轴突这个结构只存在于神经元细胞中，肩负着神经系统内传递信息的使命。

所有的轴突都有起点（轴丘）、中间段（轴突主干）和末端（轴突终末）轴突末端与其他神经元传递信息的连接点叫做突触（Synapse）。



# 神经元的分类

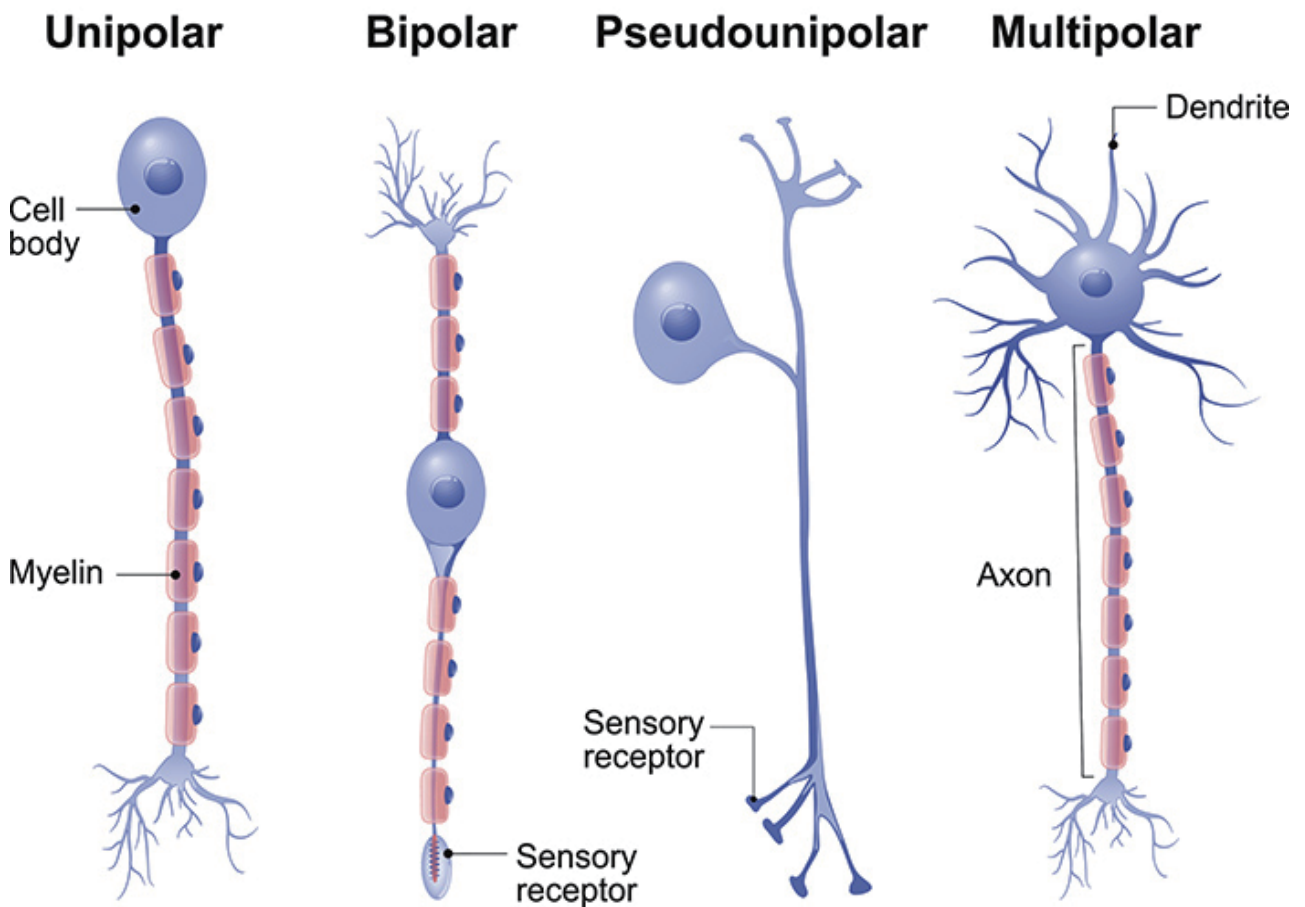
## 按结构分类

**单极神经元** Unipolar neuron: 常见于无脊椎动物

**双极神经元** Bipolar neuron: 常见于感觉神经元

**假单极神经元** Pseudounipolar neuron: 双极神经元的特殊形态

**多极神经元** Multipolar neuron: 参与运动与感觉信息加工



## 按功能分类:

**初级感觉神经元** Primary sensory neuron: 从感受器接收信息并将其传递到中枢神经系统 (Central Nervous System, CNS)

**中间神经元** Inter neuron: 从初级感觉神经元接收信息并将其传递到其他中间神经元或运动神经元

**运动神经元** Motor neuron: 从中间神经元接收信息并传递到肌肉和腺体指导工作 (CNS/PNS)

# 神经胶质细胞 Neuroglia

人类大脑中的神经胶质细胞数量是神经元的10倍以上，主要功能是支持神经元。

**在中枢神经系统中**有4种神经胶质细胞：

- 1.星形胶质细胞 Astrocytes
- 2.小神经胶质细胞 Microglia
- 3.室管膜细胞 Ependymal Cells
- 4.少突胶质细胞 Oligodendrocytes

**在周围神经系统(Peripheral Nervous System, PNS)**中有2种神经胶质细胞：

- 1.卫星细胞 Statellite Cells
- 2.施旺细胞 Schwann Cells



## 神经胶质细胞的功能

### 星形神经胶质细胞 Astrocytes

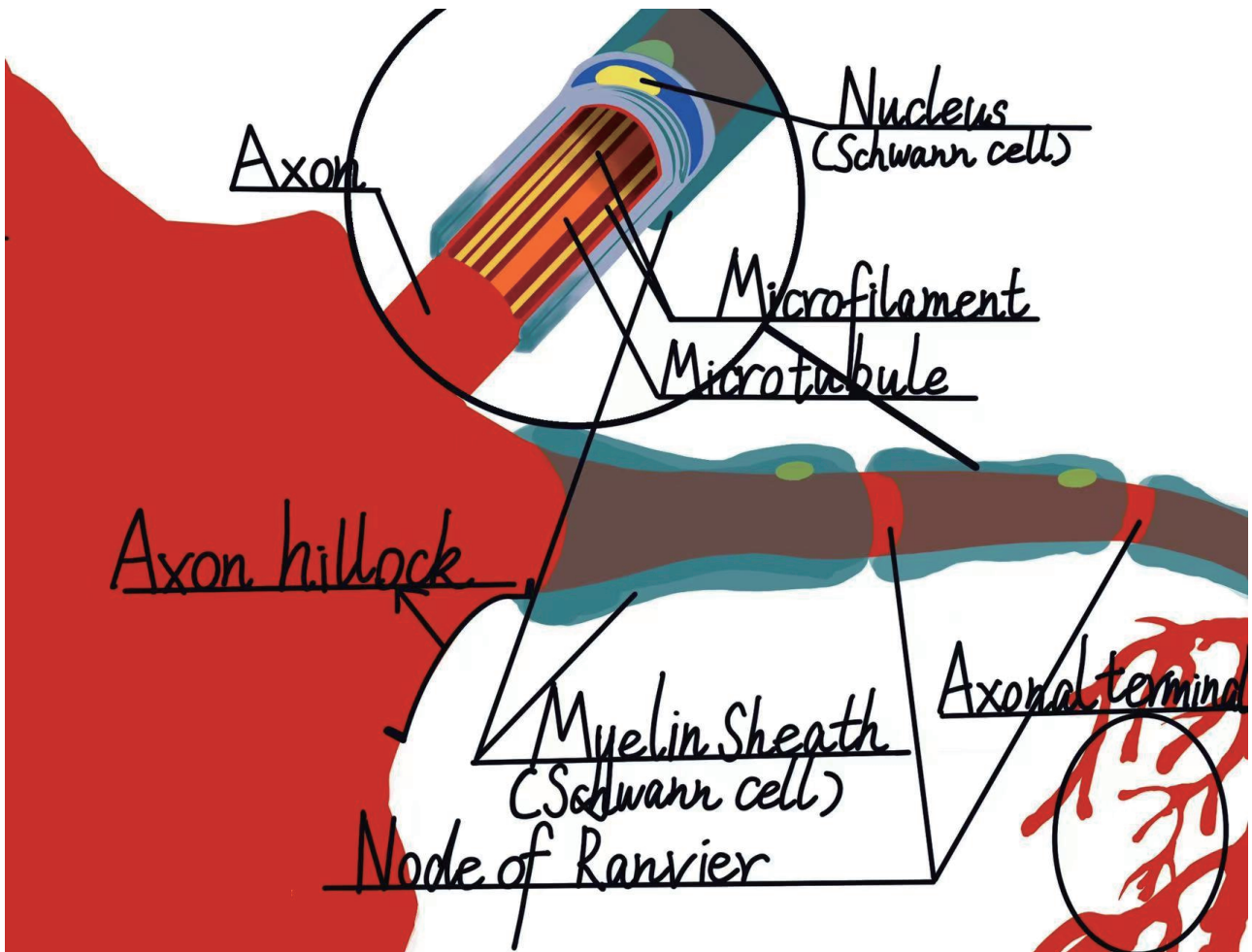
- 填满了神经元中间的间隙
- 影响神经突起的生长和缩回
- 调节细胞外的化学物质（钾离子浓度）
- 帮助突出形成并包裹突触

## 成髓鞘形胶质细胞

在中枢神经系统中，少突胶质细胞（Oligodendroglial cell）形成髓鞘（myelin），包裹着神经元的轴突。

在周围神经系统中，施旺细胞（Schwann cell）形成髓鞘

髓鞘被周期性打断，裸露出的轴突区域被称作朗飞氏结（node of Ranvier）



## 小神经胶质细胞 Microglia

- 作为吞噬细胞吞噬由死细胞或退化的神经元及神经胶质细胞胞留下的残渣
- 保护大脑，防止感染和细胞损伤

## 室管膜细胞 Ependymal Cells

- 形成脑髓液（Cerebralspinal fluid），作为脑室的内衬

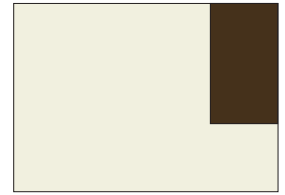


# *School Events*

*"Education is not preparation for life; education is life itself."*

*--- John Dewey*

# School Event



## Opening Ceremony

春暖花开之时，我们迎来了 2022-2023 学年的春季学期。WLSA 上海学校分别在宝山校区、政熙校区举办了开学典礼。2023 春季学期之初，WLSA 上海学校收到了来自 Mr. Tony Little 的鼓励、叮咛与祝福。Mr. Tony Little 于 2018 年起担任 WLSA 上海学校的外方校长。在此之前，他在英国著名的男子学校——伊顿公学担任了 13 年的校长。贾博校长首先祝贺大家以坚强的毅力度过了困难的 2022 年，并祝愿大家新的一年取得新的成就。同时，他叮嘱大家，在这个特殊的历史阶段，要时刻准备好应对两大挑战：

一是要准备好应对人类历史上前所未有的挑战。在人工智能时代，随着 ChatGPT 等划时代产品的诞生，纯粹的学术学习不足以应对需求，我们更需要具备强大的意志、品质和能力。教育与学校也将会被重新定义，WLSA 的 GIP 课程实际帮助我们的学生提升能力，在过去的五年中，有超过一百位校友提及 GIP 课程对于自己能力提升的帮助。

二是当前的世界正处于特殊的历史阶段。WLSA 希望培养真正对于世界有积极影响力的国际公民，当下更需要大家具备跨文化理解和沟通能力。我们希望通过教育为世界嫁接更多桥梁。



## Honor Code

春启今朝，向光而行。新学期伊始，伴随着清晨的第一缕阳光，WLSA 的学子们满怀憧憬与期待回到了校园。春季学期对于所有学生来说都是非常繁忙的。在这学期，学生们需要参加托福、雅思、AL、AP、SAT/ACT 等考试，还有部分学生报名了与自己未来梦想专业相关的竞赛。好成绩的重要性固然无需多言，但更为重要的是学术诚信。

无信则不立，无信则无德，无信则不肖。2月20日，在春暖花开之际，WLSA 学生迎来了春季学年的第一次学生演讲：Honor Code 诚信宣誓活动。



# Pi Day

圆周率日 (Pi day) 是庆祝圆周率  $\pi$  的特别日子。正式日期是 3 月 14 日，由圆周率最常用的近似值 3.14 而来。

大家通常会在下午 1 时 59 分庆祝 Pi Day，以象征圆周率的六位近似值 3.14159，有时甚至精确到 26 秒，以象征圆周率的八位近似值 3.1415926；习惯 24 小时记时的人在凌晨 1 时 59 分或者下午 3 时 9 分 (15 时 9 分) 庆祝。全球各地的一些大学数学系在这天举办派对。

## 宝山校区：

勤加练习是学习数学不可或缺的一部分。在宝山校区，不同年级、不同体系，但是同样怀揣着对数学的热情的同学们积极参与了本次活动。当场上同学们拿到题目的那一刻，场上不再有喧闹，只有大家奋笔疾书的“沙沙”声，和认真思考的身影。不管结果如何，大家用心去感受题目、用笔去反复演算的过程，将数学这门学科的魅力展现无遗。



## 政熙校区：

在政熙校区，高二和高三的同学更是在比赛现场来了一次大对决。相比于宝山校区那种浓郁氛围下的学术讨论，政熙校区这边则是一场荣誉之争。高二选修 Further Math 的同学和高三选修 College Math 的同学各显身手，使出十八般武艺，在政熙校区一决高下。不论是考验个人知识储备的数学史，还是动脑能力的趣味数学，抑或是解题技巧的竞赛真题，双方选手都在比赛中发挥甚好。

正如主持人在本次开场时所说到的：“这虽然只是 WLSA 的第二次 Pi Day 活动，但是同学们思维的碰撞和展现出的激情让所有人都坚信：WLSA Pi Day 一定会变得越来越好！”





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