**56) Many important discoveries or creations are accidental: it is usually while seeking the answer to one question that we come across the answer to another.**

Write a response in which you discuss the extent to which you agree or disagree with the statement and explain your reasoning for the position you take. In developing and supporting your position, you should consider ways in which the statement might or might not hold true and explain how these considerations shape your position.

1. 有一些重大发现是偶然性的，例如哥伦布 Columbus 发现新大陆，他本来想找一条 路去印度，结果意外发现了北美大陆。 \*\*发现青霉素

2. 偶然实际 必然，有些发 现看似偶然，但 实际是建立在 长期积累基础 上的，拥有 这些发现是因为付出了艰辛的劳动。哥伦布想证明在地球是圆的，过程中不放弃；发明青霉素(penicillin)培养皿(culture dish)，如 果不认真观察，而是把培养皿扔掉了，就不行。

3. 学科深度增加，研究方法规范化 (normalize)，意外少，大部分的发现都是有 目的有计划研 究的结果。比如，alpha go，计算机领域AI，经过大量的数据处理挖掘，一步步分析。偶然 的发现在历 史上毕竟占少数，严密的研究中，研究者的注意力放在要解决的问题上，对以外情况可 能不重视

结论:尽管偶然发现不是主流，它的存在和意义是明显的。研究中 应发挥创造性，不忽 视细节(details)，才能把握机会。

Is that true that some discoveries are found by accident? I bet your answer is yes. Then do you agree that important innovation should depend on those accidents rather than continually attempt? Peoples’ opinions mainly fall into two categories, and I tagged them as the ‘accident’ oriented and the ‘effort’ oriented. The ‘accident’ supporters regard accidental things as the most significant role of innovation. Meanwhile, the ‘effort’ believers assert any innovation can come up with great effort. Both sides justify themselves with sound reasons. From my perspective, in most cases, I would insist continually attempt pave the way for accidental innovation.

… might argue that some important discoveries are accidental. A falling apple prompts physicist Isaac Newton to formulate his laws of gravity. Greek polymath Archimedes takes a bath and figures out how to calculate volume and density. Coincidently, Alexander Fleming serendipitously discovered penicillin. These are iconic “light bulb” moments in the history of science. Or, as Archimedes reputedly said when insight struck, Eureka! In short, the ‘accident’ supporters could cite many story about Eureka moment.

… question those story’s authenticity. The story of Newton and the falling apple is recorded by William Stukeley, his friend and first biographer. They are having tea under apple trees in Newton's garden, and Newton is telling the story as an old man to a young disciple. Is that story true or just embellished? Let’s consider another famous eureka moment—the Greek mathematician Archimedes and the story of how he solved a problem for the king of Syracuse by taking a bath. In fact, Archimedes himself never wrote about this episode, although he spent plenty of time detailing the laws of buoyancy and the lever. The oldest authority for the naked-Archimedes eureka story is Vitruvius, a Roman writer, who included the tale nearly 200 years after the event is presumed to have taken place. Much like Newton's apple, the exclamation persists because of the enduring power of the story: a golden crown, a life in the balance, a naked mathematician. In short, the suspect foundations of the eureka moment take nothing away from the word's ability to uniquely and concisely convey the flash of inspiration.

…demonstrate that those so-call accidents are actually inevitable. Fleming was going to spend August on holiday with his family. Before leaving, he had stacked all his cultures of staphylococci on a bench in a corner of his laboratory. On returning, Fleming noticed that one culture was contaminated, whereas other staphylococci colonies farther away were normal. Fleming kept digging and found Penicillium. In fact, the point of the story is how diligent and careful rather than accidental. Eureka moment doesn’t give people any sense of the steps or preparatory stuff, but they love those story because it simplifies things and takes away all the hard slogging. It's an analogy everybody understands. Ultimately, Eureka stories are a compression of decades and decades of work into one inspirational moment. It's like a parable.