Group : Gist Group Leader: Feng Zhenhua (**冯振华**)

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Discussion leader: 曹雪婷

1.Why does the author advocate learning critical thinking?

Doubt gradually undermined my faith. Scientists and journalists, I realized, often presented the public with an overly optimistic picture of science. By relentlessly touting scientific “advances”—from theories of cosmic creation and the origin of life to the latest treatments for depression and cancer—and by overlooking all the areas in which scientists were spinning their wheels, we made science seem more potent and fast-moving than it really is. (from paragraph 3)

2.Why should we be rightly sceptical?

Science has established many facts about reality beyond a reasonable doubt, embodied by quantum mechanics, general relativity, the theory of evolution, the genetic code. This knowledge has yielded applications—from vaccines to computer chips—that have transformed our world in countless ways. It is precisely because science is such a powerful mode of knowledge, I said, that you must treat new pronouncements skeptically, carefully distinguishing the genuine from the spurious. But you shouldn’t be so skeptical that you deny the possibility of achieving any knowledge at all. (from paragraph 16)

3.What is the passage mainly about?

Don’t always believe what scientists and other authorities tell you! Be skeptical! Think critically! (from paragraph 1)

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Summarizer: 冯振华(Update)

This article first expressed the author's point of view, and then introduces students to some of their own early experiences of scientific failure. He went on to say that doubts shake his beliefs.

The authors asked students to doubt physicists' explanations for the origin and structure of the universe because they were not supported by tangible experiments. He also takes the same approach to the theory of consciousness, arguing that it is impossible for scientists to reverse engineer the brain because researchers do not know how the brain works, so the author is skeptical. The authors shared skeptical articles with students, and to avoid students thinking they were eccentrics, John Ioannidis’ articles were designated to show the fragility of most peer review. The author presents Philip Tetlock ’s essays that illustrate his critique of politics, history, and economics, and then discovers a correlation between expert popularity and its fallibility. Through the study of the maze experiment, it is shown that the smarter the more likely it is to discover patterns that do not exist in the world.

The author then describes the way his students responded to themselves, some more rational, but others more radical and skeptical. Still others echoed the views of the postmodernists.

After reading a large number of doubtful papers, the author suggests that students should carefully distinguish between true and false, and should not be overly skeptical and completely deny knowledge. In the end, the author saw doubt in the student's eyes and came to a conclusion: if he does his job well, the student's doubt may also turn to himself.

Connector: 刘婉莹

This essay is mainly about the author tell his students should be skeptical to new things, treat new pronouncements skeptical, and carefully distinguishing the genuine from the spurious. Don't suspect those truths that have been influenced us and the world! For example, based on the quantum mechanics, relativity theory and others, the proposed theories are transformed into applications (such as computer chips, electronic products and medical equipment.) we should doubt the latest hypotheses and statements, these may be false, may be some experts in order to be more on the TV media, to be more famous.

In daily life, we should doubt that so called experts' opinions, rather than to doubt the rationality and correctness of everything from the root. No one can say that science can solve everything. For example, our five fundamental laws in quantum mechanics, all research is based on these, do not explore why those are five, are these five? For example, do not think about the question of chicken laying eggs, it maybe stop development of science and give people a sense of nothingness.

Word Master: 陈洁妮(Update)

1. Critical thinking：社会性学习

2. Backfire：v.产生事与愿违的不良（或危险）后果，适得其反；（发动机或车辆）回火，逆火
Eg：
"But what if teaching critical thinking actually backfires?"
"In fact, studies have shown that some attempts to teach critical thinking may backfire."

3. Authority：n.专家，权威人士；行政管理机构；权利，权限；权威，威信；许可，授权；当局，官方

4. Radical postmodernists：激进的后现代主义者
Eg:
In a similar vein, some students echoed the claim of radical postmodernists that we can never really know anything for certain, and hence that almost all our current theories will probably be overturned.

5. Skepticism：n.怀疑态度；怀疑论
Eg:
We professors have a duty to teach our students to be skeptical. But we also have to accept that, if we do our jobs well, their skepticism may turn on us.

Passage Person: 刘新宇

1-4: The author's previous experience has taught him that science is endless, do not believe too much in the so-called truth that scientists and pundits tell us, and always be skeptical. The author hopes that his students will accept this view, because some scientists and journalists are now exaggerating the development of science, creating the illusion that scientific development in our understanding is more powerful than it actually is.

5-7: The author is also skeptical of the theory, and the author feels that many people are overly optimistic about the development of science, such as some fanatics who predict that scientists will create artificial brains that are more powerful than the human brain in the near future, but in fact, researchers have no idea how computers actually work. The authors argue that some areas of science have reached insurmountable limits that prevent science from solving all problems.

8-12: The author uses many people and examples in this section to demonstrate the need to be skeptical, *New York Times* reporter Gary Taubes advises readers to doubt claims about new drugs or dietary benefits, John Ioannidis's conclusion that most of the published research is false, and psychologist Philip Tetlock's book shows the results of 20 years of research on the ability of 284 politicians and economic experts to predict current events, and experts do worse than guessing or throwing monkeys with darts. But it was also found that the prominence of the experts correlated with their common mistakes, and the authors told the students about a maze experiment that proved that the smarter you are, the more you will find a different world.

13-17: In this section, the author argues for the attitude of his students towards his skeptical teaching, some people resist this view, some students are skeptical of the scientific field they are currently in, and some students are in line with the radical postmodernist claim that we can never really be sure of anything, I am surprised by this result, but the author must realize that if our teaching works well, the student's skepticism can turn to anyone, including himself.