



**AFTER HWANG: SCIENCE,
SCANDEL AND ETHICS
IN MAINLAND CHINA**

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Responses to/Comments on Hwang's Case

- ⌘ When Hwang was at the height of splendor, Korean nationalism overcame their rationality; when Hwang was down, Korean rationality overcame their nationalism. The number of scientists like Hwang in China is many . But none of them is punished. This is the fundamental reason why academic corruption prevails in China. Hwang is unfortunate to live in Korea. (Cao, B, *Southern Daily*)
- ⌘ Our universities have never apologized to the public for the misconduct committed by their scientists, so they are evading the responsibility they assume to the public. (Liu, TF, *New Beijing Daily*)
- ⌘ Nationalism and *jigong jinli* (eager for quick success and instant benefit), which are pervasive in both Korea and China, are the fertile ground for fraudulence (Wu, ZP, *Orient Net*)



Fraud and Plagiarism Plague the Academia

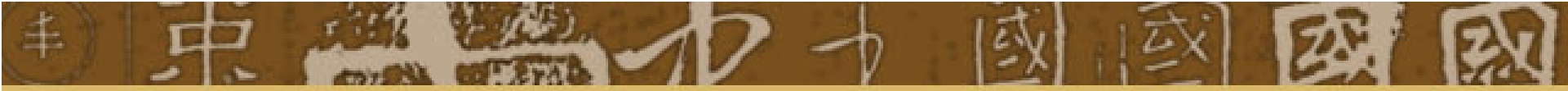
- ⌘ A recent survey involving 180 PhD degree holders: 60% had paid to publish in academic journals; 60% had copied other people's work. (*China Daily*, 2006-03-15)
- ⌘ A Ph.D. student in the Peking Union Medical School said "I can give my supervisor whatever data she wants".

Case Examples

- ⌘ Liu Hui, assistant dean of Tsinghua University's medical school, his qualifications were found to be fraudulent (exposed on 23 Nov. 2005 and sacked in March 2006)
- ⌘ Qiu Xiaoqing, a biomedicine professor at Sichuan University, was accused of publishing fraudulent research in the November 2003 issue of *Nature Biotechnology* (exposed on 18 Dec. 2005)
- ⌘ Yang Jie, Dean of School of Life Science and Technology, Tongji University, his qualifications were found to be fraudulent (removed from his post in March 2006)
- ⌘ The bulletin of Chinese Natural Science Foundation reported that there were 15 cases in 2005 and 20 in 2006, in which the applicants had committed fraud.

The Han Xin Case

- ⌘ When Chinese are trying to identify the Chinese equivalent of Hwang, CHEN Jin appeared in the most notorious Han Xin (the Chinese digit computer chips) case.
- ⌘ On 17 Jan. 2006 a whistleblower accused Chen, a former dean of the School of Microelectronics, Shanghai Jiaotong University of fraud for the No. 1 Han Xin he claimed to have invented on Tsinghua University BBC, 80% website users supported the whistleblower.
- ⌘ In August 2002, Chen, once was an engineer working at the company, bought 10 MOTO-freescale 56800 chips from USA. He had the letters MOTO on the chips removed and stamped No.1 Han Xin and its logo on them. In the same way he updated No.1 Han Xin to No. 2, No.3, No.4, and up to No. 5.




Through various connections, he obtained faked documents of “domestic designed” (from Jiaotong Univ.), “domestic produced” (from Shanghai Zhong Xin International), “domestic packaged” (from Shanghai Yuwei S & T) and “domestic tested” (from the Shanghai Center for Integrated Circuits Design).

He used every efforts to convince the officials of MOST (Ministry of Science and Technology), MOII (Ministry of Information Industry), and SCDR (State Commission on Development and Reform) to believe that it is true.

He invited well-known experts in the field of integrated circuits to attend an evaluation meeting, and the conclusion was “No. 1 Han Xin is a high memory large-scale integrated circuit at internationally advanced level”.

For 3 years he used fabricated technical data to apply for funds from the Shanghai Commission on S & T, MOST, MOII, Shanghai Commission on D & R, SCDR and others forty times and obtained funds over 100 million *yuan* (£7,600,000). He also used the faked chips to apply for 12 patents and approved.



Treatment of the Han Xin Case

- ⌘ On 12 May 2006 Shanghai Jiatong Univ. released a bulletin on investigation conclusion and treatment on the fraud of Han Xin series of chips. The university decided to remove Chen Jin from the post of Dean of the School of Microelectronics and from professorship.
- ⌘ MOST decided to end his research projects, required him to return the funds, and cancelled his qualification to take future national research project.
- ⌘ Ministry of Education decided to withdraw his title “Yangtze River Scholar”, cancelled his qualification to enjoy special allowance, and required him to return the funds.
- ⌘ SCDR decided to end the projects of high-tech industrialization and required him to return the funds.

Regulation on the Treatment of Fraud (7 Nov. 2006, MOST)

- ⌘ Academics will be punished if they falsify resumes, plagiarize other's findings, fabricate scientific data, or violate rules governing research on humans (informed consent and privacy) and animals.
- ⌘ The punishment will range from the suspension of research funding to expulsion from their affiliated research bodies, The heaviest punishment will be disqualification from state science projects for life.

Comments on the Treatment (I)

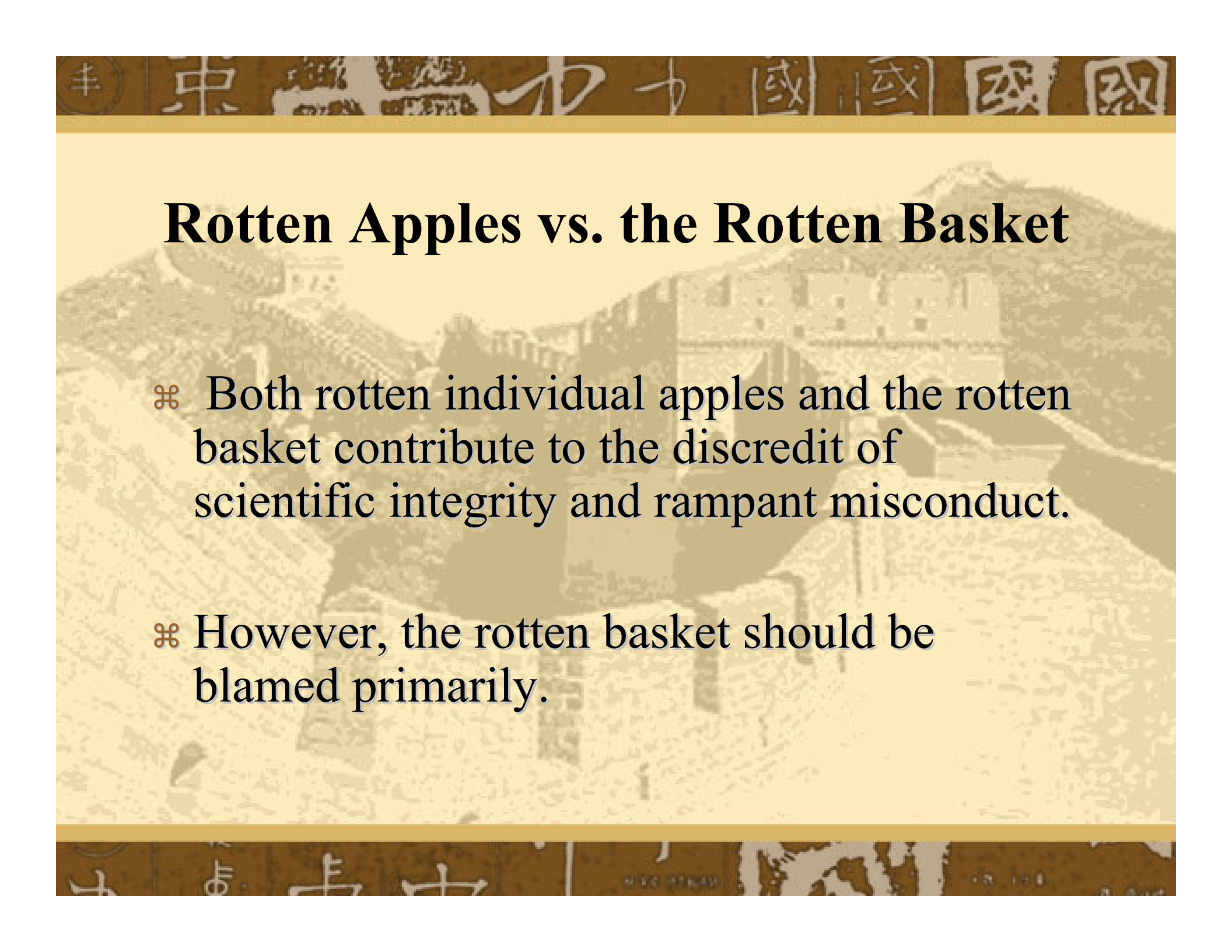
- ⌘ Many commentators were not satisfied with the treatment of the Han Xin scandal.
- ⌘ The Han Xin whopper began with expert evaluation. Why the evaluation meeting became a rubber stamp? What is the liability assumed by these experts? (Yan Y, *Goat City Evening*)
- ⌘ What kind of liability the experts who participated in evaluation should bear? What kind of liability governmental departments should bear? (Gu HB, Renmin Univ.)
- ⌘ Why Jiatong Univ. did not disclose the exact figure of the funds Chen Jin cheated? How could he get his forty applications for funds approved through the strict review procedures? Why all these reviewers and approvers are silent now? The innovation strategy, the public finance and the tax-payers are now at stake. (Zhou QR, *Economic Observation*)

Comments on the Treatment (II)

- ⌘ The Han Xin case was not given strict treatment. It set a marking pole for scientific-fraud makers, which will lead to the corruption and fraud more unscrupulous. The result is Zizhu Chuangxin (autonomous innovation) becomes a lip-service only. (Shi YP, <http://www.sina.com.cn>)
- ⌘ Han Xin scandal is not a one actor play. Academic corruption will not be eradicated without complete investigation of relevant responsible persons. It is necessary to pay heavy costs for all participants in making fraud. We expect to disclose all truth, and punish all fraud-makers and co-conspirators. (Zhu SG, *China Youth Daily*)

Comments on the Treatment (III)

- ⌘ Nobody taking legal liability is the connivance of academic corruption. (Liu, XR, *China Youth Daily*)
- ⌘ The whistleblower requested to investigate Chen Jin's criminal liability. (Jin L, <http://www.sina.com.cn>)



Rotten Apples vs. the Rotten Basket

- ⌘ Both rotten individual apples and the rotten basket contribute to the discredit of scientific integrity and rampant misconduct.
- ⌘ However, the rotten basket should be blamed primarily.

The Evaluation System

- ⌘ The existing evaluation system, which emphasizes the quantity of papers rather than their quality. Senior scientists are demanding for “don’t count chickens” and calling for reform of the quantitative assessments of scientific research results, which they believe have brought about flippancy in scientific research and will hinder research and development in the country.
- ⌘ Statistics indicate that China is in the 5th place in terms of its number of research papers for the science citation index, but ranks only the 120th for their citation rates.
- ⌘ Evaluation meetings have become a rubber stamp: institution leaders can invite their expert friends to attend, or offer high allowances to them, or hold the evaluation meeting continuously until a positive evaluation is given.

The Reward System

- ⌘ Current reward system constitutes a pressure or inducement to fraud and plagiarism. Outer reward was paid more attention than inner reward.
- ⌘ 50,000 yuan (£3,300) is awarded to those who publish a paper in *Nature* or *Science*.
- ⌘ Ph.D. students are required to publish several articles in international or national journals before their viva.
- ⌘ Productive scientists may be awarded 5 million *yuan* (£330,000), various honorary titles, important position at department, institute, university, academy or ministry, guest on TV, member of People's Congress or Political Consultation Conference etc.

The Oversight System

- ⌘ No oversight system at all. But self-discipline of scientists is not reliable. Oversight from outside is needed.
- ⌘ The Ministry of Education announced that it is planning to set up a national supervision committee. It will work out detailed rules on the criteria and punishment for academic corruption and misconduct, and investigate such cases. The 25-member committee will consist of scholars from academic institutions.

Allocation of Funds

- ⌘ China's investment in science and technology reached 71.6 billion *yuan* (£ 5.11 billion) in 2006, up 19.2% over that in 2005.
- ⌘ But the scientific community is seriously concerned about how to allocate such large public funds. They are calling for making research spending more transparent by inviting bids for projects online and building a database of funding candidates and expert panels to assess them.

Review before Publication

- ⌘ No peer review by anonymous referees is required before papers are published for many academic journals
- ⌘ Authors have to pay publishers to have their papers or books published.
- ⌘ So papers or books with low quality are easily published if the author has money.
- ⌘ No critical comment after published.

Liability

- ⌘ Universities are to blame as they often help cover up misconduct. Many fraud makers still work as professors or hold administrative positions despite scandals.
- ⌘ Malpractices of accountable officials are covered up too, perhaps even more so.
- ⌘ “Who are liable for letting the money paid by tax payers being thrown about?” The public asked.

Scientists' Sensibility to Ethics

- ⌘ “There is no forbidden area in science and technology”.
- ⌘ “Ethical norms will be changed with the progress of science and technology”.
- ⌘ “Ethical issues can be bypassed by technical innovation”.
- ⌘ But there have been some encouraging changes in recent years. More and more scientists have begun to be aware of ethical issues emerging in science and technology. Some of them joined to the recommendations on dealing with misconduct or regulating biotechnologies (ART, stem cell research, organ transplantation etc.)

Decision-makers' Sensibility to Ethics

- ⌘ When drafting the 863 programme on the relationships between genes and diseases, a relevant project on the social, ethical and legal issues in life sciences and biotechnologies was drafted with funds worth 1 million *yuan* (£ 0.07 millions).
- ⌘ But the responsible official said that it was not the right time to deal with it, and removed the project.
- ⌘ We must ask: when would be the right time?

Conflict of Interest

- ⌘ China continues to further reform its innovation mechanisms and strengthen the role of enterprises as the main participants in technological innovation.
- ⌘ The official said: “We aim to set up a technological innovation system that has enterprises as the main participants. It will be market-oriented and supported by close cooperation between industry, colleges and research institutions.”
- ⌘ There is no mention of potential conflict of interest.
- ⌘ The other effect of emphasizing cooperation between industry, colleges and research institutions is basic science marginalized and under-invested. In PUMC Hospital all laboratories that are not relevant to sell diagnostic or therapeutic services are closed.

Problems in Education

- ⌘ Many Chinese students learning for exams, rather than for building capacity.
- ⌘ The quality of education has decreased because many schools and universities are busy in making money. They substantially enlarge the number of students to boost their income. Students below the standard can gain entry as long as they pay.
- ⌘ Too many graduate students are enrolled, but are trained in the same way as undergraduates. Professors with power and connections can recruit many students to supervise, but not qualified professors.
- ⌘ Inadequate education in the humanities and social sciences: these subjects could facilitate creativity and train students to be more open- and liberal-minded. Narrow-mindedness is not only unhelpful but dangerous. Recently 10 Ph.D. students signed an initiative to boycott Christmas.

Scientism

- ⌘ In the debate between scientism versus humanism, some scientists took a negative attitude towards humanism and reverence for nature.
- ⌘ Science has been exaggerated as omnipotent. Some believe that all problems in economic growth and social development can be solved only by science. “Science is not a double-edged sword”, “It has only positive consequences”.
- ⌘ Scientism is counter-productive to the development of S & T which needs a humanist niche.

The Public's Attitudes towards Science and Technology

- ⌘ A survey conducted by the Institute of Science Popularization (Scientific Time, 2007/1/4)
- ⌘ 87.5% agree: S & T give our offspring more opportunity for development
- ⌘ 72.1% agree: S & T give us more benefits than harms
- ⌘ 84.9% agree: Scientific research is necessary, the government should give support
- ⌘ 10% agree: Even there is no S & T, people can live better
- ⌘ 12.8% agree: The development of S & T will make the interpersonal relationship more distant
- ⌘ 34.4% agree: The development of S & T will make more and more people unemployed.

Nationalism

- ⌘ Hwang: “Yellow people can do what white people cannot do”. It reminds us of Mao’s saying: “oriental proletariat can do what occidental bourgeois cannot do.”
- ⌘ Achievements in science have nothing to do with class or race. It is a natural result of adequate investment, qualified human resources, excellent programmes, proper policy, effective systems, good governance and liberal culture.
- ⌘ Science is essentially an international endeavor. Newton said: “I stand on the giants’ shoulder.” The nationality of the giant or Newton is irrelevant. However, it is reasonable for a nation and its people wishing to make more contributions to S & T, and improve human existence with the application of S & T.

Attitude Changes in the Government

- ⌘ After the Hwang and the Han Xin scandals, MOST is paying more attention to prevent fraud and plagiarism.
- ⌘ Similarly, the Ministry of Health has paid more attention to protect patients/human subjects since the publicity of some notorious cases such as treating drug addiction by brain surgery. Regulation on Biomedical Research Involving Human Subjects is now promulgated.
- ⌘ We hope that regulations will be improved and, more importantly, they be effectively enforced and implemented.

When will the Nobel Prize be awarded to scientists from mainland China?

- ⌘ One Nobel laureate predicted that Chinese scientists will win a Nobel Prize within 20 years. Similar assertions have also been made by either Chinese or foreign scientists three times last year: some said the Prize will come in 40 years, others said in 30 years.
- ⌘ My view is: we should forget about the Nobel Prize for the time being, and focus on solving the pressing issues mentioned above.
- ⌘ Never ever did a Nobel Prize winner set out with the goal to win the Prize for the sake of it. Only when we forget about the Prize may it be the time for us to win it.



Thank You for Your
Attention and Patience