

Editorial

Finding and Winning the Truth

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It happened so fast.

In January 2014, a paper published in *Nature* by Dr. Haruko Obokata and her group of RIKEN, Japan, amazed worldwide scientists. Instead of creating pluripotent cell through genes induction as introduced by a Nobel prize winner, Prof. Shinya Yamanaka (known as induced pluripotents/iPS cells), Dr. Obokata used completely simple method: exposure to stress condition, including a low pH. Technically, when the cell is rinsed with acid solution –so called acid bath– its pluripotency will be triggered. The pluripotent cells developed through this method known as STAP cells. Definitely, the finding is not only a breakthrough, but also, this is the most important, the method is much more malleable, faster and efficient than iPS cells for medical purposes. Shortly, Dr. Obokata earned her highest popularity in the world.

In February 2014, the questions dealing with STAP cells arose. The issue was about reproducibility of acid bath method. Many other labs, out of Dr. Obokata's group, reported that they failed reproduce Dr. Obokata's method in creating STAP cells. Are STAP cells, as claimed by Dr. Obokata, really exist?

Shortly, the questions turned to skepticism about STAP cells. Fraud speculation on STAP cells spread unstopably. Addressing various allegations and concerns that have been raised regarding STAP cells issue, RIKEN took very serious action: investigation. It was in March 2014. RIKEN's investigation on this issue revealed that no evidence for breakthrough research on STAP cells. In other words, the investigation confirmed that STAP cells were never exist.

Despite Dr. Obokata's denial on the investigation's result, the lack of evidence and reproducibility of her claim on STAP cells are sufficient to scientifically conclude that there is a fraud in STAP cells. At the end, any fraud in science will not be exist any longer, the truth will always wins.

Max Perutz, a Nobel laureate, a decade ago, clearly stated this issue. In science, nature always tells us what is right, and that answer is considered as truth and final. Thus, in science, truth always wins. Whatever your claims, when the claims are irrelevant with nature evidences, we have to come to the conclusion that the claims are scientifically not the truth. In respect to STAP cells, nature tells the truth to other researchers who found STAP cells was irreproducible. Cells rejected acid bath and STAP cells do not exist due to the rejection. These are what nature tells to them. Indeed, there were no evidences for "nature acceptance" for acid bath done by Dr. Obokata. While the evidences always support "nature truth", Dr. Obokata failed to provide the evidences assuming her claim is likely not the truth.

Following the announcement of RIKEN's investigation on April 2014, the *Nature's* paper was retracted and Dr. Obokata was severely punished. The story of STAP cells, and Dr. Obokata's career as well, came to the end. The truth won!

Dr. Obokata case is only an example on the issue of "truth" in science. You may dig out more examples throughout science timeline. Why the truth issue is important to be highlighted?

The answer is quite simple. From scientific point of view, it is clear the foundation of science is an absolute truth. Science is not a collection of subjective opinion. Rather it is a collection of explanations about objective reality that is based on observed or predicted phenomena. In addition, the explanation must be verified repeatedly to confirm that it correctly models reality. This is definition of truth in science. Any unverified evidences are not considered as fact or truth. This issue was then derived as part of ethical aspect in science that is strictly applied in all science-related activities.

The best answer for the afore-mentioned questions came from Islamic point of view. "The truth of nature" can be viewed as following:

Perutz's quote implies that we may find the truth in nature. Whatever nature tells – through some evidences-, this will be considerably a truth to be accepted. Indeed, In Islam nature is considerably unwritten truth (qauniyah). The truth is inseparable with the written truth (qauliyah). Indeed, both are complement providing "the truth". In term of exploring the truth inside nature, motivation of muslim scientists in "finding and winning the truth" is considerably different to "conventional" scientist.

The attempts to find the truth is part of strengthen aqidah and faith. It deals with (1) Qanun al-illah; (2) Qanun al-wujub; (3) Qanun al-Huduts; and (4) Qanun an-nizham. This is one of Ulil Albab's characteristics, in which they always think about nature created by Allah and take lesson to strengthen their faith. Any evidences found in nature by muslim scientists will be part of the evidence of Allah SWT's existence and greatness. The evidences will be also considered as part of their attempts to utilize nature for the welfare of human being. This is meaning of "winning the truth", in which it is spread and implemented for society.

Thus, seeking, studying, and winning qauniyah truth are indeed unavoidable as part of our attempts to fill our obligation as a muslim. It is considerably part of our attempts to find the qauliyah truth as well. Sincerity in this issue is a must, as our finding highly relevances to our aqidah and faith to Allah SWT. Any falsification is strictly considered as sins as it may promote misunderstanding about Allah SWT or even losing the faith.

The consequence is muslim scientists should carefully design and implement appropriate process to have conclusion as accurate as possible, as any conclusion is about our faith to Allah SWT, the creator. In science, the process is designated as "research method". The better method, the better and accurate conclusion will be obtained. Further, it more strengthens aqidah, faith and surely robustness of the implementation of the truth in the society. It is not about ethical issue anymore, it is about obligation of muslim to be sincere in any aspects. It is about process to strengthen aqidah and faith, which should be done with the correct process. Finding and wining the truth in Islam are aimed for these purposes.

Thus, theoretically, fraud is the impossible thing to happen among muslim scientist. It is not only just a sin, even worst; it may affects aqidah and faith.

In relevance with "finding and winning truth", current edition of *the Journal of Islamic Perspective on Science, Technology and Society* (JISTECS) highlights two interesting papers.

Syah and Gumilang focusing on current paradigm on marine and fisheries, which is not compatible for realization of national food security. They derived "the truth" in Al-Quran on how to manage marine and fisheries with syariah paradigm to address national food security. It yielded the following key points: (1). Marine resources are the common property; (2). Availability of sufficient and intelligent human resources; (3). Availability of reliable and adequate technologies; (4). Availability of conducive market; and (5). Preservation of marine sustainable resources.

Gamin and his co-authors highlight many unresolved forest-land tenure conflicts due to inappropriate policies for long time. The authors further disclose "the truth" on the Islamic perspective on this issue as new approach resolving the conflict. The concept of land of usyriyyah managed by the Caliph is introduced and described in the paper.

In term of science, the ideas proposed by the authors are open to be verified by others researcher. It is mainly dealing with the method to derive and interpretation of the authors on "the truth" of qauniyah and qauliyah. Any scientific verification by other researchers are part of "finding and winning the real truth" to strengthen our aqidah, faith and utilizing science for ummah.

Allahumma arinal-haqqa haqqan warzuqnat-tiba'ah, wa arinal-batila batilan warzuqnaj-tinabah, bi rahmatika ya arhamar-rahimeen.

Happy reading!

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