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## The Sad Case of Dr. Hwang — Cloning, Ethics, and Scientific Fraud

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Just a few weeks ago, South Korean scientist Woo-Suk Hwang was at the top of the scientific world — the focus of global attention. Now, all that has changed.

In February 2004, media reports indicated that Dr. Hwang and his colleagues had successfully employed a process for cloning known as “somatic cell nuclear transfer” and had produced living embryos from human eggs. The South Korean government made Hwang a national hero of sorts, and Hwang was touted as a front-runner for a Nobel prize. Forces pushing embryonic stem cell research in the United States pointed to Hwang and his team with alarm, warning that the U.S. would fall behind Korean and other nations if restrictions on embryonic stem cell research were not lifted. There was even talk of a Korean postage stamp for Hwang. But Dr. Hwang’s scientific reputation is now largely destroyed.

From *The Korea Times*: *Stem cell scientist Hwang Woo-suk admitted his landmark work was fabricated and agreed to request that the journal Science withdraw his paper on it, his Korean scientific collaborator said Thursday. Roh Sung-il who provided eggs for Hwang’s research said that no patient-specific stem cells existed. Hwang and Roh were among the coauthors of the paper on extracting 11 patient-specific stem cells featured in the U.S. journal Science this May.*

All this came weeks after Dr. Hwang admitted that he had used human eggs that had been unethically obtained. As the Korean paper reported: *In this climate, scientists worry that Hwang’s original breakthrough of harvesting the first-ever cloned human embryonic stem cells published by Science in 2004 will also be suspected.*

*The Scientist* added background: *Questions about Hwang’s work began to arise internationally in late November after an MBC program, PD Notebook, revealed ethical lapses in his work. His main US collaborator, Gerald Schatten, has since taken several steps to distance himself from the Korean researcher, culminating in a request to Science this week that his name be struck from the author list of the article. Last week, Seoul National University began investigating allegations about Hwang’s work. Science is also investigating. The journal said Hwang had told them he would contact his co-authors, since retractions require that all co-authors agree on the move.*

*The New York Times* sounded the alarm: *Scientists and ethicists caution that the full story is not in, but they are staggered by how the research has unraveled so far. “This is a tragic turn,” said Laurie Zoloth, director of the Center for Bioethics, Science and Society at Northwestern University. Stressing that she considers Dr. Hwang innocent until proven guilty, she asked, however, whether the edifice of stem cell research was built on sand. “We depend entirely on the truthfulness of the scientific community,” Dr. Zoloth said. “We must believe that what they are showing us and what they say has been demonstrated is worthy of our concern and attention.” The South Korean story, Dr. Zoloth added, raises questions about whether the science is good. “Good as in true and real and morally worthy of our funding,” she explained. “That is so most especially in this twilight sort of terrain with a lot of open questions that people disagree about. At least we thought that the step-by-step slow technical achievements had placed the science on a trajectory.*

*Scientific American* dropped Dr. Hwang from its “2005 *Scientific American* 50.” The journal’s editors released a statement that said: *With considerable disappointment, the editors of Scientific American are immediately removing Dr. Woo Suk Hwang from his honored position as Research Leader of the Year on the 2005 Scientific American 50 list. . . . Dr. Hwang’s deceit misled Scientific American along with the international scientific community. We regret, in writing*

*about his work and awarding him a place among key technology leaders, having unknowingly misinformed readers about his actual accomplishments. We are also deeply concerned about the lasting damage that this fraud may do to the reputation of stem cell research, which we continue to regard as a highly worthy endeavor generally pursued by scientists keeping to a far higher standard of honesty and ethics.*

The dust has yet to clear in this controversy, and a process of lengthy scientific reviews will surely follow these revelations. Nevertheless, the participants have already admitted to ethical lapses that cast a cloud of moral suspicion over the entire field.

There are a couple of important lessons here. First, we must remember that claims of scientific discoveries and achievements are often revealed to have been either premature or false — and sometimes even fraudulent. Second, we must remember that any research that involves the destruction of human embryos is immoral on its face, regardless of what others would measure as the integrity of scientific research.

ADDITIONAL COVERAGE: *[The Scientist](#)*, *[National Review](#)*, *[Chosun Ilbo](#)* [South Korea], *[The Seoul Times](#)*, *[The New York Times](#)*.

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