



Bioethics Roundtable

Hwang Woo-suk, Cloning and Human
Embryos

What is bioethics?

- ▶ Branch of **applied ethics** that studies the philosophical, social, and legal issues arising in **medicine** and the **life sciences** (Britannica)
- ▶ Topics range from organ transplants to environmental ethics



Case Study: Hwang Woo-suk

- ▶ General overview of the case
- ▶ Overview of topics
- ▶ Food for thought
- ▶ Notes for Honours Abstract



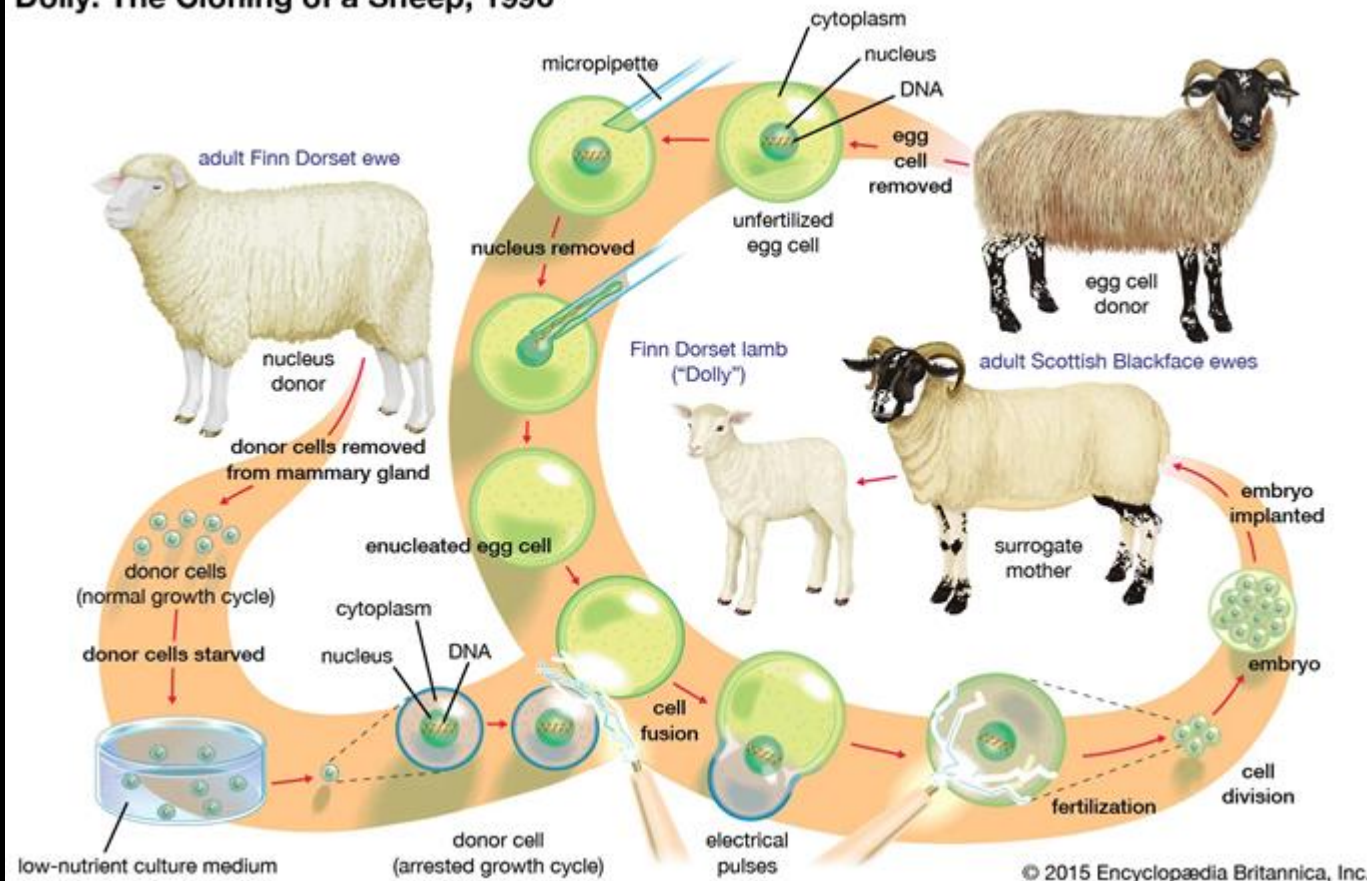


Who is Dr. Hwang?

- ▶ Veterinarian by trade
- ▶ Doctorate in theriogenology (study of animal reproduction)
- ▶ Professor at Seoul National University (fired later on)
- ▶ Fame with cloning animals
- ▶ Called the "Pride of Korea"

Chopsticks and S.C.N.T

Dolly: The Cloning of a Sheep, 1996



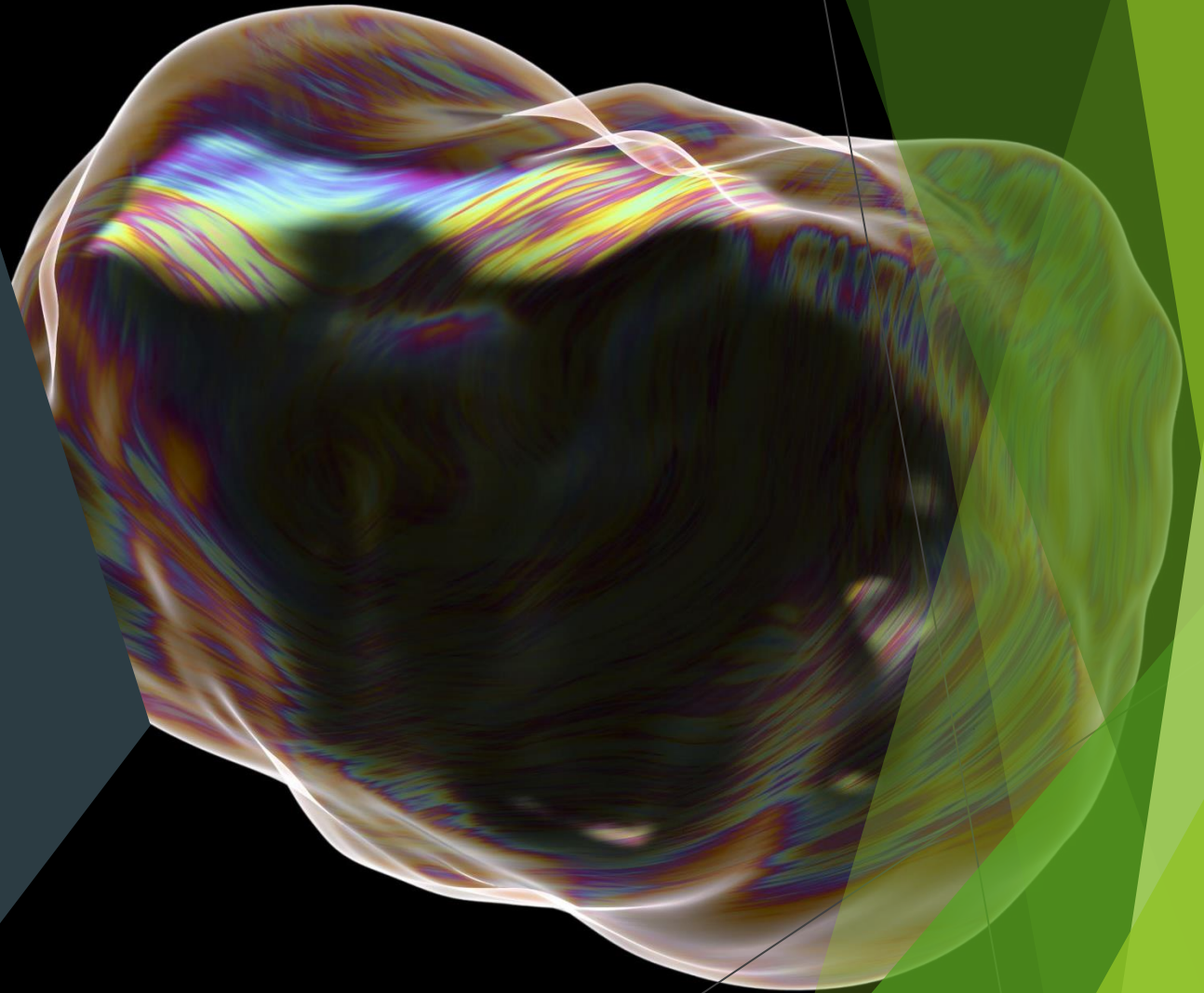
Somatic Cell Nuclear Transfer

Low success rate

Chopsticks theory

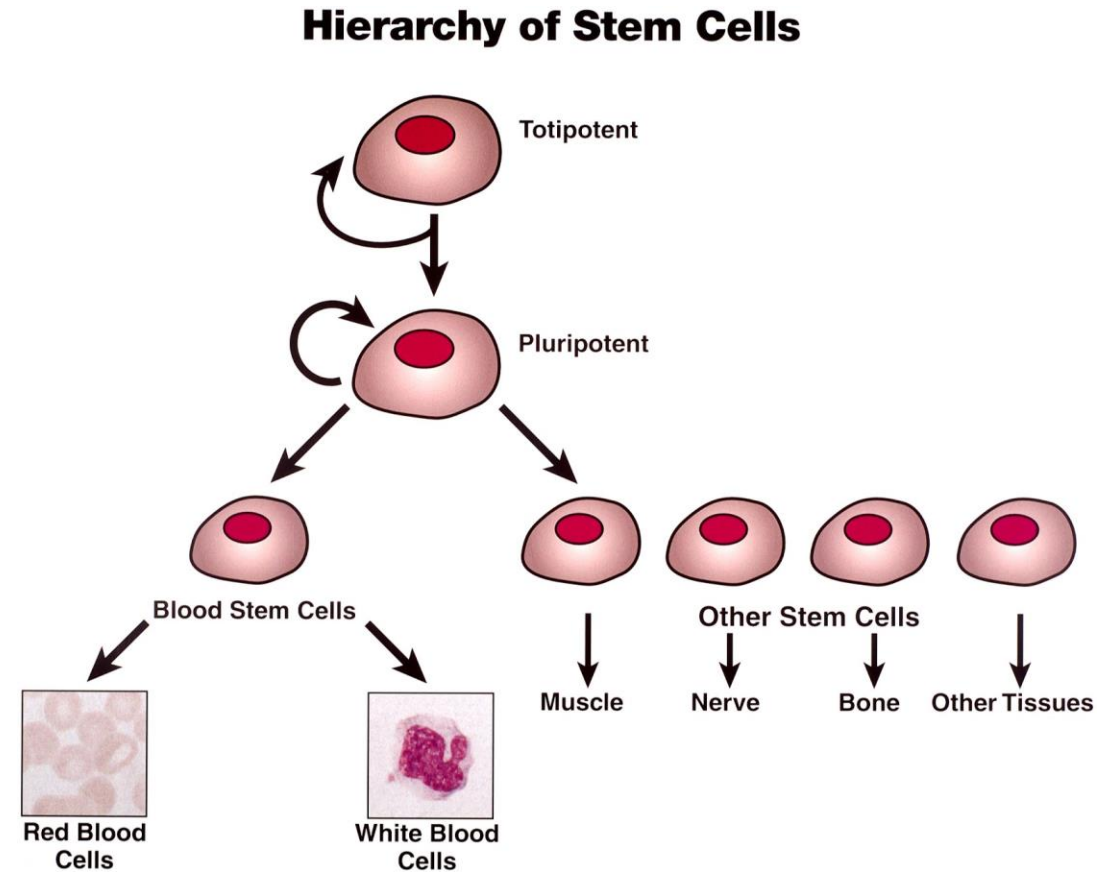
International Recognition

- ▶ "Evidence of a Pluripotent Human Embryonic Stem Cell Line Derived from a Cloned Blastocyst" published in Science in 2004
- ▶ 11 stem cell lines in 2005
- ▶ Cloned Embryonic Stem Cells
- ▶ Potential for personalized treatment



Stem cells and embryonic stem cells

- ▶ Embryonic stem cells
- ▶ Totipotent, Pluripotent, Multipotent
- ▶ Stem cell line
- ▶ Spinal cord injuries, Alzheimer's, etc...
- ▶ No risk of rejection





Fall and collapse

- ▶ Concerns over purchase of eggs
- ▶ Coercion(?) of research team members
- ▶ Faked data
- ▶ Fraud?
- ▶ Embezzlement and bioethics violation
- ▶ Loss of positions and titles
- ▶ Snuppy was real though



Regulations

- ▶ States should "adopt all measures necessary to **prohibit** all forms of human cloning inasmuch as they are **incompatible** with **human dignity** and the protection of **human life**." (United Nations Declaration on Human Cloning)
- ▶ TCPS2 2022 on Ethical Conduct for Research Involving Humans - Chapter 12: [TCPS2-2022-Word-dec-19-2022-en Left alignment without index table of contents \(clean\) \(ethics.gc.ca\)](#)

Hwang Woo-suk now

- ▶ Project in Lybia
- ▶ Sooam Biotech
- ▶ H BION Inc.
- ▶ Cloning humans as "unacceptable"
- ▶ Expertise





The question of cloning

Stem cell research with human embryos



A close-up photograph of a white laboratory rack filled with numerous small vials. The vials have different colored caps: blue, purple, and orange. Some vials have white labels with black barcode patterns. The background is blurred, showing more vials and laboratory equipment. The image is partially covered by a black and green geometric overlay on the right side.

Purchasing eggs
for research and
experiments

Roundtable Time!

- ▶ **Topic 1: Cloning in research**
 - ▶ How should cloning be regulated?
- ▶ **Topic 2: Using human embryos for research**
 - ▶ Is using human embryos for research ethically responsible? Should we use human embryos at all?
- ▶ **Topic 3: Using human body parts for research**
 - ▶ Should society allow the usage or purchase of human body parts for study and experiment? Would that research's commercial use be acceptable thereafter?