

Gunther von Hagens (1945-)

Gunther von Hagens invented a plastination technique and created Body Worlds, a traveling exhibit that promotes public engagement with the study of human anatomy. Von Hagens invented the plastination technique in 1977 while working at Heidelberg University in Heidelberg, Germany. Von Hagens' plastination technique preserves real bodies and tissues by the removal of the fluid and replacement with resin. Body Worlds features three-dimensional, plastinated human bodies. As of 2012, the exhibition has given greater than 32 million people worldwide the opportunity to peer inside the human body, something previously available mostly to those in the medical field. Von Hagens and Body Worlds educates by displaying diseased and healthy specimens. The exhibits have contributed to embryology through their displays of human pregnancies, embryos, and fetuses.

Von Hagens was born Gunther Gerhard Liebchen in 1945, at the end of World War II, in Posen, Poland, which was then a part of Germany. Fleeing from political turmoil in the region, the Liebchen family spent six months traveling west and eventually settled in the East German town of Greiz. During his childhood von Hagens spent several months in the hospital from complications due to hemophilia, a blood clotting disorder, and he later said he left the hospital in awe of the body and of medicine. His interest was further piqued at the age of seventeen after he observed an autopsy.

Von Hagens immersed himself in topics that he found interesting. One such topic was Sputnik, the Soviet-launched satellite, for which von Hagens became a local expert at the age of twelve. His peers described Von Hagens as an outspoken student who often encouraged unorthodox thinking. He enrolled at the Medical School of Friedrich Schiller University in Jena, Germany in 1965. During his time at the university, von Hagens began to question communist ideas and decided to leave the German Democratic Republic. In 1969 he attempted to illegally cross the border, he was arrested, and he remained in prison for two years. After his release, he completed his studies at the University of Lübeck Medical School in Lübeck, Germany, and in 1974 he earned a license to practice medicine. At the university that he met his first wife, Cornelia von Hagens, with whom he had three children: Rurik, Bera, and Tona. He changed his own surname to von Hagens because of the teasing he endured for the name Liebchen, which means little darling in German, and he kept the von Hagens name when he and his wife later divorced.

In 1974, von Hagens interned at the Department of Anesthesiology and Emergency Medicine at Heidelberg University, but he later said that practicing medicine little interested him. Switching tracks, he became a research assistant at the Anatomical Institute of the university. There, he saw organs preserved in plastic blocks and thought of putting the plastic in the organs themselves.

Over the next decade, von Hagens developed his plastination technique. To plastinate tissues, organs, and bodies, all of the fluids are first removed, followed by an injection of a resin material, which is then cured with light. The resin hardens into a durable plastic without damaging the tissues. Von Hagens' work, for which he has multiple patents, was lauded for its potential to increase the shelf life of medical school specimens. Von Hagens formed a company, Biodur Products, to distribute the tools and chemicals necessary to perform plastination. These products were sold to medical schools and scientific institutions so they could create their own specimens for educational purposes.

Supported by the positive reactions to his work, von Hagens and his second wife Angelina Whalley, whom he married in 1992, created a traveling exhibition titled Body Worlds. Since the exhibition's Japanese debut in 1995, it has been restructured several times and has traveled in Asia, Europe, and North America. According to the New York Times, Body Worlds has proven to be a most popular display. Von Hagens has stated that the ability to accurately visualize tissues because of plastination

has increased his appreciation for the human body.

The prenatal development displays have also contributed to the field of embryology. Plastination has given non-embryologists the opportunity to view embryonic and fetal development stage by stage with real examples. Many argue that those examples convey more information than do photos or descriptions. The same holds true for the Body Worlds pregnancy displays; it is not often that the public can see the inside of a pregnant woman's stomach, which some of the specimens in Body Worlds enable.

In addition to Body Worlds, Von Hagens also founded the Institute for Plastination at Heidelberg University. In Bishkek, Kyrgyzstan, he directed the State Medical Academy Plastination Research Center, and in China he started the company Von Hagens Dalian Plastination Ltd. He has also been a staff member for the Chinese Dalian Medical University in Dalian, China, and at the American New York College of Dentistry in New York, New York. His coworkers and students describe him as gregarious and identify him by his signature black hat.

Questions about the ethics and purposes of Body Worlds have prompted responses from von Hagens. There has been public concern that bodies used in the exhibit have been procured without consent. In response to the accusations of illegal cadaver purchases, von Hagens has reiterated that he has a confidential donor program in place to guard against unethical practices. All of the adult bodies used are received through the body donation program, which requires donor consent. The embryos and fetuses come from medical school specimen stocks. Von Hagens has also been the target of sexism accusations because of the large number of male bodies that he displays. He counters that he is aligning with traditional anatomist practices, which utilize males because of the size and clarity of their body parts. He compares himself to Renaissance anatomists. Body Worlds has begun, however, to include more women to appease critics. As the exhibition is global, some have disliked it because of cultural and religious beliefs. The Catholic Church and some Jewish rabbis have criticized it.

Regardless of where the specimens are housed, von Hagens' plastination work supplements education and has made the intricacies of development, pregnancy, and anatomy more accessible to public audiences.

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