

The art of medicine

Spectacular anatomy: plastination and salutary dread

In recent years one of the most controversial uses of anatomy for public display has been Gunther von Hagens' *Body Worlds* exhibitions. Von Hagens also provoked fresh outrage by selling plastinated human and animal body parts online. While some may consider this as an entertainment activity, or a pretext for commercialising the human body, von Hagens has claimed that "The primary goal of *Body Worlds* is health education". As stated by the Institute for Plastination, these notorious exhibitions using human remains to deal with the subject of anatomy aim "to educate the public about the inner workings of the human body and show the effects of poor health, good health and lifestyle choices". Certainly, more than 34 million people have attended the touring *Body Worlds* show; among the exhibits they have encountered are a lung blackened by smoking, a cerebral haemorrhage, metastases of the liver, and the harmful physical consequences of obesity. In an interview in 2001, von Hagens put it this way: "The exhibition—and this was intentional—was not a school of anatomy but an 'anatomy exhibition', an 'anatomy experience', and thus also an 'emotive anatomy'. The lesson is not didactic. The idea is to convince by example."

There is a long history of anatomists who have used art and spectacle to convey health-related knowledge,

for example, in the many anatomical atlases of the Renaissance and the 18th-century anatomical-artistic *Écorchés* of Honoré Fragonard. During the 19th century, however, the art of anatomical preparations diverged from the science of pathological anatomy, and artistic representations of anatomical models became less common. More generally, the thrust of positivism distanced science from emotion and from the artistic techniques used to generate emotion. The *coup-de-grâce* was delivered to any "artistic contamination" during the 20th century with the advent of modern medical imaging, which made it possible to bypass the anatomy of the cadaver in favour of the anatomy of the living person. However, von Hagens distinguishes himself by reviving the spectacular representations of anatomy that were popular at the end of the 19th century, when it was believed that the public presentation of diseased organs would produce what was known as salutary dread.

Von Hagens' *Body World* exhibitions seem to subscribe to the tradition of the celebrated "Doctor" Pierre Spitzner (1833–96) and his travelling Grand Museum of Anatomy. Although we may never be certain as to whether Spitzner was a qualified physician who used the title of "doctor" legitimately, some of his wax models were used to teach anatomy in faculties of medicine. These objects, although works of art, were nonetheless created by taking into account contemporary anatomical knowledge. Yet, with the advent of new anatomo-clinical methods, these wax models soon became obsolete and Spitzner began to exhibit his anatomical collections around the fairs of Europe.

In settings outside of medical schools and cabinets of curiosities, Spitzner exhibited wax models, preserved fetuses, and tanned human hides to crowds of curious lay-people. His travelling exhibition displayed, among other things, wax models of the stomach of an alcoholic, the genitalia of a syphilitic man, and the lungs of a patient with tuberculosis. Although this exhibition undeniably partook of the tradition of a "cabinet of horrors" imbued with sensationalism, one of Spitzner's main goals was, nevertheless, to educate the public about the dangers of excess and debauchery in the broad sense. His approach was modelled after the rhetoric of fear, deemed beneficial in this period when syphilis and alcoholism raged alarmingly. Public health, morality, and personal sanitary responsibility were intricately linked by Spitzner and his contemporaries. The poster promoting the presence of the Grand Muséum d'Anatomie at the Roubaix fair in 1908 announced:



A general view of human figures in *Body Worlds* by Gunther von Hagens
This image is taken at the *Body Worlds* show at Officine Farneto, Rome, Italy, showing from Sept, 2011, to Feb, 2012

Ladies and Gentlemen,

From birth until death the road is long. A creature's arrival on the scene of life and its development before reaching its definitive form represent astonishing problems. Anatomical science consists of this: Seeking the secret of LIFE in DEATH! In the injured organ, seeking the CAUSE OF THE DISEASE in order to alleviate suffering. That is what a scientist does! For you the People, it's another matter. For you, anatomy is a reality about which your mind requires knowledge. Anatomical waxworks will teach you to understand yourself physically. Thus you will be able to contemplate your strengths and your weaknesses. Pathology will produce in you salutary dread.

Apart from the fact that the *Body Worlds* exhibitions use "real bodies", by contrast with the Grand Muséum d'Anatomie which relied on waxworks, the conceptual similarity between the two exhibitions is striking. Both von Hagens and Spitzner rely on the spectacular and the sensational and seek to democratise anatomical knowledge. Both also state that they aim to give individuals greater responsibility in maintaining their own health. Moreover, Spitzner's notion of "salutary dread" suggests that he seeks to inform through emotion. José van Dijck has observed that "Von Hagens's plastinated cadavers perfectly fit the long-standing scientific tradition of anatomical body production, as much as they prolong artistic conventions of anatomical representation". In our opinion, thanks to the protracted yet inevitable divorce between art and science in the context of anatomical preparations that took place during the 19th century, the plastinated exhibits do not prolong this tradition so much as they revive it.

Von Hagens has thus in some respects recycled the old educational strategy of salutary dread used by Spitzner and his contemporaries. It would be worth evaluating von Hagens' success from an anthropological point of view. Does his approach legitimise a return to emotion-based health education for laypeople? Or should it, on the contrary, serve as a warning to be vigilant about the power that emotion exerts over behaviour? For although it has had an educational impact, the *Body Worlds* exhibition raises many questions and draws attention to important paradoxes. For instance, von Hagens reportedly maintains that by obtaining specimens with what he says is informed consent for every case of plastination, his work respects individuals and their autonomy. However, the act of consenting that after death, one's own body be plastinated, cut up, displayed, and used by another person to artistic, educational, or commercial ends places the body and its parts in the category of things. An individual can thereby become the owner of these "things", include them in the market and entertainment economy, and enrich himself thereby, without benefiting the donor or the donor's heirs. From an ethical perspective, this is a far cry from benefit sharing.

However, benefit sharing may lie elsewhere, for instance in the post-mortem appreciation of the individual; not only from the individualistic point of view of being immortalised in a work of art offered up to the appraising eyes of the public, but also from the altruistic point of view of helping to educate the public with touring exhibitions and by selling some plastinated body specimens to faculties of medicine to train future doctors, which is something that von Hagen undertakes. This standpoint is nevertheless difficult to reconcile with contemporary bioethics, which place the reification of the body and body parts at the forefront of its concerns, to ensure respect for the dignity and integrity of the human being. In this context, outside of medical research or practice, one may also question the value of a consent that posthumously leaves a donor's body or body parts to projects that manifest the artistic will and fantasy of a third party, without the possibility of the donor knowing in advance what artistic or educational project his or her body will contribute to.

Furthermore, the cadaver's meaning, protected by funerary traditions and legal prohibitions, is based on cultural arguments that put forward specific views of the world, life, death, and the individual. Nonetheless, the success of exhibits such as those of von Hagens provides us with interesting insights about a modern sensibility that is fascinated by these representations of the human body. Moreover, it sheds much light on new representations of the human being and body, as well as possible social and commercial uses that are emerging in our societies. An extreme example of this approach in art might be Sun Yuan and Peng Yu (Cadaver group), two of China's most controversial artists. Renowned for creating artistic performances using human fat tissue, live animals, and even the cadavers of babies in their art, they challenge us to revisit our views. At a time that witnesses the development of predictive, regenerative, and transformative medicines often situated on the boundary between life and death—such as the creation of embryonic and stem cells; the sale, transplanting, and fabrication of organs; and the existence of surrogate mothers—it is essential to examine whether the preservation of the integrity of the body must also signify, by definition, the preservation of human dignity.

We thank Dr Jean-Marie Moutquin and Dr Régén Drouin for their support, as well as the Centre de Recherche Clinique Étienne-Le Bel, of the Faculty of Medicine and Health Sciences of the University of Sherbrooke, which helped make this essay possible.

**Chantal Bouffard, Mickaël Bouffard*

Division of Genetics, Department of Pediatrics, Faculty of Medicine and Health Sciences, University of Sherbrooke, Sherbrooke, QC J1H 5N4, Canada (CB); and Department of Art History, Faculty of Arts and Sciences, University of Montreal, Montreal, QC, Canada (MB)
chantal.bouffard@usherbrooke.ca

Further reading

- Barnett R. Lost wax: medicine and spectacle in Enlightenment London. *Lancet* 2008; **372**: 366–67
- Cuir R. Gunther von Hagens, inventor and imitator. *Anthropol Today* 2006; **22**: 20–22
- Delpoux S. Venir en aide aux vivants: entretien avec le docteur Gunther von Hagens. *Art Press* 2001; May (special issue): 76–77
- Le Floch-Prigent P, Martinello K. Dissection of the neck: a wax anatomical sample of the Spitzner Collection (no 23) in the Delmas, Orfila and Rouvière Museum of Anatomy: an observation and photographic tri-dimensional reconstruction. *Morphologie* 2010; **94**: 81–86
- Hoffmann KA. Sleeping beauties in the fairground. *Early Popular Visual Culture* 2010; **4**: 139–59
- Lemire M. Artistes et mortels. Paris: Editions Raymond Chabaud, 1990
- Morone JA. Enemies of the people: the moral dimension to public health. *J Health Polit Policy Law* 1997; **22**: 993–1021
- Van Dijck J. Bodyworlds: the art of plastinated cadavers. *Configurations* 2001; **9**: 122
- Von Hagens G, Whalley A. *Body Worlds: the anatomical exhibition of real human bodies*. Exhibition catalogue. Heidelberg: Institut für Plastination, 2004