

The body snatchers

Rising demand has created a thriving market for human body parts—and not all of it above ground. Emily Waltz explores the unsavory world of tissue trade.

For 58 years, Alistair Cooke enchanted his radio audience. A Brit who lived in New York, Cooke regaled listeners in the UK with stories about Americans and was honored for bridging the distance between the countries.

In March 2004, one week after he announced his last broadcast, Cooke died of lung cancer in his New York home. He was 95. As his listeners mourned, his family sent his body to be cremated at a local funeral home.

But the ashes that came back were not from Cooke's body.

In December 2005, Cooke's family learned that his body had been surgically plundered and the pieces sold to different bidders. A body brokerage company had harvested his bones, falsified his medical records—claiming he had died at 85 of a heart attack—to make them more marketable, and then sold them to at least two tissue banks.

Cooke's was one of more than 1,000 bodies allegedly stolen by the company, New Jersey-based Biomedical Tissue Services. Prosecutors say the company and the funeral home, Daniel George & Son, made millions of dollars harvesting pieces of the cadavers, instead stuffing bodies for burial with broomsticks and piping. An investigation is ongoing.

The gruesome case, which dominated headlines for weeks, is only the latest instance of body snatching in the past few years. Required for education, transplant and research, human tissues are in increasing demand. In the flourishing underground market, a single cadaver sold for its parts can fetch up to \$200,000. Individual parts can make their way through several brokers before ending up in retail stores, fraternity houses, art exhibitions, the online auction eBay—or research labs.

"This is a dirty market," says Glenn McGee, director of the Alden March Bioethics Institute at Albany Medical College in Albany, New York. "The materials for scientists depend on a supply chain that begins with guys in dark suits expressing strong sympathies."

Hunting for human tissue

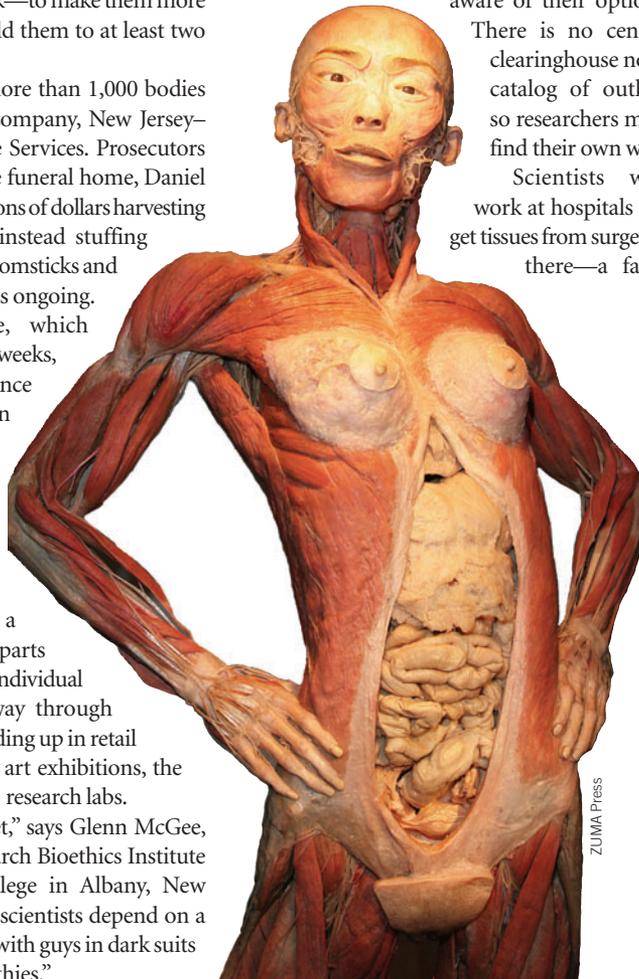
Too often, scientists don't ask where the samples they use come from. But the implications of their ignorance go beyond ethics. As in Cooke's case, unscrupulous body brokers can tamper with facts and seriously skew a study's outcome—or worse, a transplant recipient's fate.

Scientists can't just rely on the government either. Following some particularly gruesome cases, the UK in April launched a stricter set of laws on handling human tissues. But in the US, the Food and Drug Administration (FDA) monitors only organs used for transplant, not those used for research or education, letting the onus fall on the researcher.

Tissues for research are available from any number of places, but most researchers aren't aware of their options.

There is no central clearinghouse nor a catalog of outlets, so researchers must find their own way.

Scientists who work at hospitals can get tissues from surgeons there—a fairly



common practice—as long as they follow rules of confidentiality. They might even share tissue samples, trading the pieces they don't need.

State anatomical boards and nonprofit donation programs also contribute. Nearly all medical schools have a body donation program, and some allow scientists access to the bodies their students don't dissect. Some hospitals also use organ procurement organizations. When someone dies, these organizations first try to find a transplant recipient, but if no match can be found quickly, arrange for a researcher to get the organs.

But that route is far from reliable.

"You can't predict when people will die," says Eric Liu, a clinical research fellow at the US National Institute of Diabetes, Digestive and Kidney Diseases. "If it has to be human tissue and you want it to be fresh, you have to be ready to accept it and process it at all hours." Liu, who uses pancreatic tissue in his studies, says he has on more than one occasion had to process samples in the middle of the night.

With an unpredictable supply of bodies, scientists, especially those in need of specific tissues, sometimes turn to for-profit companies who work with the funeral industry. But approaching these sources is risky, experts caution.

"The most egregious behaviors involve individuals in the profit-for-death industry that are taking advantage of their unique situation," says Todd Olson, director of the body donation program at the Albert Einstein College of Medicine in New York. "This is one of the most secretive groups of people," he says.

Those who work in the death industry don't have to open their books to the public so they can reap enormous profits—none of which reach the donor's family—from scientists and funding agencies.

Undying market

Illegal body trade has long been a lucrative proposition. In the 1800s, the UK and the US saw a sharp rise in the number of medical schools that needed cadavers for their students to dissect. But at the time, dissection was an option only for the poor, who couldn't afford a proper burial, and not for the middle and upper classes.

With the rising demand, medical schools began collecting unclaimed bodies from poorhouses. When there was a shortage, the schools would hire body snatchers to rob graves. In the 1820s, two Irishmen, William Burke and William Hare, reportedly murdered 16 people and delivered the corpses to a doctor for payment.

By 1950, advances in science encouraged people for the first time to donate their bodies. Vaccines for polio and rabies, anesthesia for childbirth and antibiotics all led people to

believe that science could create a better world, says Michael Sappol, a medical historian at the National Library of Medicine.

But the demand outpaced the rise in donations. Researchers found new ways to use human tissues in their work. Companies wanted body parts to test new surgical devices and diagnostics. Continuing medical education courses needed cadavers to train surgeons. In recent years, some large-scale projects such as mapping the human genome boosted the market even more.

“Better genetics means that diseased tissue can now be used to look for markers that indicate risk factors for disease. So trash now has value as a source to develop genetic tests,” says Arthur Caplan, a bioethicist at the University of Pennsylvania. “This leads companies to want to build big biobanks of rotten pancreases, crummy lungs, failed hearts and burnt-out livers.”

With the clamor for tissues, even scrupulous handlers of cadavers were tempted to try and profit. Some of the most infamous cases surfaced in the courts and the news in the last few years.

In March 2004, for example, Tulane University officials discovered that seven corpses the university sold to a broker were blown up in landmine tests. University officials said they sold the cadavers for \$7,000 to the National Anatomical Service, a New York-based distributor. The organization then sold the bodies for nearly four times the amount to the US Army. Families of the donors were outraged that the bodies had not been used for science, but university officials pleaded ignorance.

An even more shocking case emerged in 2004, when Henry Reid, director of the body donation program at the University of California in Los Angeles (UCLA) was accused of trafficking as many as 800 bodies into the black market. Over six years, Reid had allegedly made more than \$700,000 allowing a broker to pick through the university's freezer and resell body parts to the medical community. UCLA closed the program in 2004 and an investigation is ongoing, but Reid has not been charged with a crime.

As more tales of thievery surface, researchers say they are concerned that people will stop donating their bodies to science. “It’s a big worry,” says David Burr, chief of anatomy at Indiana University School of Medicine. “We don’t have an overabundance of bequeathals. Our programs work off good public relations, so when something happens at UCLA, it’s a problem for us too.”

Loose laws

With so much at stake, why have the laws remained so lenient? The reason, bioethicists say, is hard lobbying by those in the death industry and legislators’ reluctance to deal with the icky subject matter. “It’s a business



Night watch: Fresh tissue from human bodies, such as this pancreas, often arrives in the wee hours, says Eric Liu, a researcher at the US National Institutes of Health.

with a nefarious history and nobody wants to talk about it,” says McGee.

In the US, the FDA regulates tissues used for transplant and requires disease screening and medical history of the donors. But no federal law or agency regulates the sale of human tissue intended for research or teaching. State laws govern the trade, but are based on loose wording of what’s known as the Uniform Anatomical Gift Act of 1968.

The act is now up for revision, although it is unclear exactly what might change. As it stands, the law requires consent from the family or the donor to use the body for science. It also prohibits anyone from selling human tissue for profit.

But vague wording in some sections allows much room for interpretation. For example, tissue brokers are allowed to recoup “reasonable” costs for shipping and handling, but the law does not define what is considered reasonable. Donated bodies must be used for science in some way, but ‘science’ is an undefined catch-all category.

Other countries have even fewer rules. Until April, hospitals, coroners and anyone else who handled cadavers in the UK did not have to get formal consent to dissect the body. The UK’s Human Tissue Act of 2004, which went into effect in April, requires everyone who handles cadavers to get a license and to ask for written consent from the families. The act also set up a Human Tissue Authority to inspect tissue brokers on site.

But the best solution, experts say, is not more government oversight.

“The government will just screw it up,” says Kenneth Iserson, director of the Arizona Bioethics Program at the University of Arizona. “They will overregulate in some bizarre fashion that will make it more difficult than it already is.”

Instead, experts say, organizations that buy bodies should require total transparency from suppliers. These groups should demand documentation on how handlers store and transport the bodies, and how much money they received in return.

Some also suggest that funding agencies and institutional review boards require more explanation from researchers on how they plan to acquire their tissue samples.

Few researchers routinely ask questions about a tissue’s origin or about the middlemen along the trade route who could have profited. But they might pay the ultimate price if there are unscrupulous brokers involved. For example, if a scientist studying bone loss in aging women uses tissue from a 75-year-old postmenopausal woman that is labeled as tissue from a 42-year-old premenopausal woman, the sample could clearly skew the results.

“If I could give one piece of advice to bench researchers, I’d say ask for the source,” says Olson. “If the funeral industry was involved, you need to ask more questions.”

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