Human cloning possible but remains 'abhorrent' in minds of public

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A Chinese company building a massive animal cloning facility doesn't want to limit itself to just replicating cattle and pets but hopes to move into the human cloning business in the future.

The company, Boyalife Group, possesses the technology to do so, its CEO, Xiaochun Xo, told AFP, but to date has been "self-restrained" because it fears public backlash.

It's not surprising that the technology exists, experts say. But it's likely to remain unused in the near future because there isn't a powerful enough medical reason that could swing public opinion in favour of human cloning.

"The technology exists. It's been carried out on animals," said Lee Silver, a professor of molecular biology and public affairs at Princeton University in New Jersey, who wrote a book on cloning ethics.

"The technology to clone human beings is essentially going to be the same."

Nearly 2 decades of animal cloning

Scientists have been cloning animals for nearly two decades. In 1996, Dolly the sheep, the first mammal successfully cloned from a single adult cell, was born to a surrogate mother. Since then, scientists have cloned many other animals, including goats, cows, rabbits and cats.

There are a handful of companies that clone animals sold as livestock or pets. Founded in 2002, Texas-based ViaGen, for example, clones cattle, horses, pigs and goats, as well as cats and dogs. In 2014, another Chinese company, BGI, cloned 500 pigs annually, the BBC reported.

Boyalife previously joined forces with another company, the Sooam Biotech Research Foundation, to clone dogs commercially.

But Boyalife's new facility, now under construction, aims to be the biggest commercial operation to date. The animal cloning facility "will clone animals, including sniffer and pet dogs, beef cattle and race horses" and is scheduled to be operational sometime in the first half of 2016, according to a company statement.

The centre will start off producing 100,000 cattle embryos, Xiaochun says, and later boost its output to one million to help meet the large demand for beef that cattle farmers are struggling to keep pace with.

But Xiaochun, who received a bachelor degree in microbiology and biochemistry from the University of Saskatchewan in 1995, suggested the company would be a logical choice to make the world's first cloned human once it's legal and supported by the public.

Human cloning 'abhorrent' to many

While people, for the most part, seem to have accepted animal cloning and some gene editing advancements, many stop short of wanting scientists to dabble in human replication.

"Many people find cloning abhorrent ... very unnatural and very disturbing," said Kerry Bowman, a bioethicist at the University of Toronto.

A good deal of that stems from a misunderstanding about what cloning means, Bowman and Silver say. People tend to imagine science-fiction accounts of genetically superior, cloned armies and ego maniacs creating exact replicas of themselves.

"Scientists can not recreate a person," Silver says.

A clone would share the genetic material of its parent, but it wouldn't be the same person. Grieving parents, for example, couldn't re-create a deceased child's looks and personality. The clone would have major differences.

"It probably wouldn't be as disturbing to people as many people think it may be," said Bowman.

Clones, both say, already exist in nature. Just look at identical twins, who look the same but act differently.

A clone "would be just like a later born identical twin," said Silver. Many people might not even realize someone is a clone, as they would be at a different age than the original.

Ethical concerns remain

But, even the true definition of cloning presents potential problems for public acceptance.

One of the main tenets of medicine is to do no harm, but cloning could harm the babies created, says Bowman. Animal clones have experienced secondary effects such as deformities, premature birth and arthritis, he said.

There could be undue pressure on clones created to look like deceased family members to be similar to those people, Bowman says, which "could create a very disturbing and destructive psychology."

The main reason not to clone a human is that "it doesn't overcome any medical problem at the moment," Silver says.

Before the success of in-vitro fertilization, human cloning remained a potential solution to infertility. Now, he says, infertile couples have enough other options.

For all these reasons, most scientists have agreed not to pursue human cloning, and many governments, including Canada, have banned it.

Potential 'publicity' stunt

But, since the technology exists, it's likely someone, somewhere will one day attempt to clone a human, Silver says.

Unless any of the ethical concerns around the issue change, Silver imagines a scientist's sole motivation would be for the fame of being the first person to do it.

"I don't think the public would take kindly to it, but it certainly would generate a lot of publicity."

Whether that will be Boyalife or another group of scientists remains to be seen.

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