

[youtube:<http://www.youtube.com/watch?v=SKeorEMkFGY> w auto]

Video on genetic engineering recorded 2009

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Scientists at Massachusetts Advances Cell Technology (ACT) have succeeded in cloning a gaur, an ox-line animal at threat of extinction in Southern Asia. They used the "Dolly the sheep" animal cloning technique to create 81 cloned embryos after 692 attempts using gaur skin cells and cow's eggs. These cloned embryos were then implanted into cows, with 8 pregnancies, five miscarriages and three expected live births. (Source Guardian 7 October 2000)

The work is similar to that carried out by Jose Cibelli in the same institute four years earlier, where he used his own skin cells and a cow's egg from which the nucleus had been removed. The result was a developing ball of cells which was genetically his own identikit clone. He destroyed it and kept quiet for several years.

The next step by ACT will be to clone the first extinct animal, the bucardo. Scientists discovered the last animal dead, but in time to freeze and preserve tissue samples for animal cloning.

### **What about human cloning? Here are two important human cloning tools:**

**First**, we have seen now in humans and in animals that cells from an adult of one species can be combined with unfertilised eggs from another species to create viable clones. The latest cow experiments confirm the strange truth that if Jose Cibelli's human-cow twin had been implanted it could well have developed into what looked like a human being. It would have been 99% his twin brother genetically, and 1% cow - because the cow's egg contains mitochondria or cell power generators, and these are self-reproducing with each cell division.

**Second**, a human cloning process either with a human egg or a cow's egg or a monkey egg or whatever, can be concluded perhaps by implanting that human cloned embryo into the womb of another species altogether - such as a baboon or a chimpanzee.

Not yet perhaps because of complex rejection / immune issues but a real possibility in the future.

Strange thoughts, perhaps, but over ten years ago I met a British scientist who confessed to me that he was looking to clone human embryos (for spare parts) and cultivate them by implanting in the wombs of monkeys.

But this is only the first hour of the first day of the genetic revolution - what about tomorrow. I am against human cloning for many reasons, and also concerned about attempts to merge animal and human genes. Here is a profound question: how many human genes does an animal need to have to gain human rights?