Should We Clone Extinct Species?

Claire Wohlfeil

Pinckney New Tech High School

"*Discovery is always a rape of the natural world. Always.*"

-Ian Malcolm, Jurassic Park, p. 284

Cloning: one of the most recent scientific breakthroughs. It started with Dolly the sheep, the first cloned mammal, in February of 1997. Scientists and civilians alike were excited for the many possibilities of this new technique. For the amount of excitement Dolly created, however, there was an equal amount of controversy. One particular example of this is the topic of cloning extinct species. Like any ethical topic, there are its share of positives and negatives, but as this paper points out, one outweighs the other. Extinct animals should not be cloned because of how they will affect or be affected by the environment, the well-being of the animals, and the uncertainties as a whole.

One major problem with cloning extinct species is how well they will adapt to the environment around them, and also how the environment will adapt to them. Bringing back an extinct species could introduce problems such as where they would live, what would they eat, how would they survive? Since many of these extinct animals have been gone before most of us were even alive, the answers to these questions won't be so obvious. Take the woolly mammoth, for example. They've been extinct for about 200,000 years, in which the earth has drastically changed. The climate is no longer how it used to be, and there are many different plants and animals now. How would we get the woolly mammoth's food? How would we replicate their habitat? The thought of cloning just one animal would turn into cloning an entire different era.

"Beside the fact that it's essentially impossible to reconstitute a complex ecosystem of the past, the introduction of revived species into present habitats puts current species at risk." (Lori Marino, Four Reasons Why We Should Oppose 'De-Extinction') These new animals could bring

even more problems to the current habitats of the world. They could become a whole new competitor for food, possibly decreasing the number of existing species, therefore making them endangered and increasing the rate of another species extinction. Some may say we could control the rate of the extinct species, monitoring and even holding them in captivity, but as said in Jurassic Park, "Life breaks free. Life expands to new territories. Painfully, perhaps even dangerously. But life finds a way." (Jurassic Park, p. 159)

Another concern not only with captivity of the animals, but also the resurrecting of them is whether or not it is to the best interest of the health of the animal. "Some scientists have admitted to wanting to proceed with de-extinction simply because they can, so that we can see extinct species again in our lifetimes ... perhaps in its own way this wish to clone extinct animals for selfish purposes is a form of hunting; giving or taking a life for our own personal gain." (Zion Lights, Should Cloning be Used to Bring Back Extinct Species?) There are not many explanations as to why these animals would be cloned, except for profits. "There are very few molecular biologists and very few research institutions without commercial affiliations. The old days are gone. Genetic research continues, at a more furious pace than ever. But it is done in secret, and in haste, and for profit." (Jurassic Park, p. xi) Although it may not sound harmful to these animals, many problems could go wrong with bringing these creatures back to life. "[Dolly] was the only successful organism in 237 eggs that had been used to create nearly 30 embryos that perished after being implanted into 13 surrogate mothers. Three lambs were created but only one survived. Dolly suffered from severe arthritis and lung disease due to genetic mutations that occur during cloning and had to be euthanized at the young age of 6 years – half her species' natural lifespan." (Lori Marino, Four Reasons Why We Should Oppose 'De-

Extinction') If there is this affect on an animal we know extensively about, then there is no doubting the outcome of a far less-known species will be the same if not worse.

Knowing next to nothing about these animals presents many uncertainties. Take the woolly mammoth for example. "The two fundamental steps involved in cloning a mammoth, or any other extinct animal, are to recover its complete DNA sequence...and to express this data in flesh and blood. ...the remaining 30 percent of the genome would have to be recovered and the entire genome resequenced several more times to weed out errors that have crept into the ancient DNA over the centuries as it degraded. Scientists would also have to package the DNA into chromosomes—and at present they don't even know how many chromosomes the mammoth had." (Tom Mueller, Recipe for a Resurrection) Not having full understandings of these creatures can cause major mutations to the animals, inflicting damage to these animals by which we cannot treat.

As a result from cloning, animals can have serious mutations and illnesses that wouldn't be treatable. Habitats would have to be constructed to support these creatures and their former lifestyle. We would have to go to great lengths just to have a chance at conforming these animals and the environment around them. There are far too many negative implications for the cloning of extinct animals to be considered. As Ian Malcolm said, "You know, at times like this one feels, well, perhaps extinct animals should be left extinct" (Jurassic Park, p. 189)

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