



CLONE WARS!

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The nightmare seems to be named Dolly, after Dolly Parton-cloned from a cell removed from the udder of an adult sheep. Next come the monkeys, cloned from monkey embryo cells. Then come cries of concern, outrage, and even horror from the moral trend-setters and other pundits around the world, some professional doom-meisters, others just eager to hop on to this new bandwagon and get their names on media Rolodexes as "experts" or "opinion makers." Books will soon follow.

My first reaction, I'm afraid, was a big yawn, and no real opinion whatsoever. I've been writing science fiction since I was eight years old and reading about clones for at least that long, and to my mind, riddled with imaginative scenarios, the cloning of a sheep is pretty ho-hum. Not to say it isn't important-but it just confirms what I've known since my youth, that things are changing and nothing will ever be the same.

I've long since been immunized against future shock. I do not fear legions of marching Hitler clones, I don't even anticipate clones of Robert Heinlein or Philip K. Dick growing up to push me out of the science fiction market. (I've already dealt with competition from a clone SF writer-Gregory Benford, my good friend, is twin brother to physicist James Benford.)

Here's what will probably happen.

At some point in the next twenty years, a company will offer parents the service of "backing up" their children. If a child dies, the mother can give birth to a genetically identical child some time later, and start over again with the equivalent of a twin of the original. The twin will not have the original's memories, and will not behave exactly like the original, but with reasonable care and suitable upbringing, the grief of such a loss might be mitigated.

Another company, working with a progressive HMO, might offer to produce tissues and organs from a modified clone of your own body, in case you should need them. The organs will be grown not by a whole body duplicate of yourself (I presume-that might be too bizarre to be acceptable), but will probably be produced using more sophisticated, less gruesome techniques. Clone marrow, for example, might provide you with your own private blood supply. Hearts, corneas, livers, lungs, skin, etc., could be replaced at will. A severe burn victim could be given a new genetically identical skin; accident victims might have limbs or organs regenerated in a healing bath of nutrients. It probably won't be cheap at first, but demand and market efficiencies should reduce cost in the long run. This could put to an end such horrors as the theft or purchase of organs from the poor.

Genetic engineering and the mastery of the human genome will make cloning just one more technique in a broad repertoire. For many years I've written of a near future that allows citizens to design their own body shapes; we will also be able to augment or improve what nature gave us. Mental functions might be repaired or advanced, eliminating neuroses and psychoses. This opens up the far more interesting (some would say alarming!) prospect of modifying the mix of talents, abilities, and personalities in human society. In fact, aging and education already accomplish similar transformations every year.

I'm not much concerned with theological implications. We've been messing with nature and playing God for centuries, using blunt but effective techniques such as selective breeding in animals, and surgery and drug therapy in medicine. We're already committed to taking control of our lives and our environment. For too long, we have clung to the nurturing yoke of ancient philosophies and ideas; the yoke sac is now



almost empty and needs to be re-evaluated, perhaps put aside with other childish things. What our ancestors could not possibly imagine is now part of our everyday lives, and we still haven't been struck by God's vengeful lightning. Ethical and legal issues are going to be very complicated, even troublesome, but they are not going to be insoluble.

In the long run, we will either succeed, and become the true managers and conservators of the resources of Earth and the solar system-even the stars-or we will fall by the wayside as another interesting but ultimately unsuccessful experiment. We must take responsibility; that seems to be what we are designed to do, for better or for worse.

The President can't stop it, and neither can the Pope. I certainly don't want it stopped. I'm getting older year by year, subject to more illnesses that these technologies might cure.

The public needs to play catch-up with the startling present. Dolly is just one more step on a long, sometimes scary trip into a future that not even I can safely predict. I think it will be a better future, but it may not. It will be made and lived in, after all, by a world full of folks who by and large never read, and even shun, science fiction.