The Truth Behind Fear and Cloning

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In a scientific first, Korean researchers announced this week that they culled stem cells from a human clone. They did this not because they want to make carbon copies of people, but because they hope their research will lead to lifesaving therapies for maladies like Alzheimer's disease or spinal injuries.

But when most people think of cloning, they often think of renegade scientists sneaking women away in the night to take their eggs and re-create someone's departed relative. Or they envision baby farms where emotionless scientists steal organs for wealthy patients.

Brian Alexander, author of *Rapture: How Biotech Became the New Religion*, has met just about every player there is in the cloning game, from Nobel Prize winners to a homosexual lighting-store owner who believes cloning can grant gay couples their constitutional right to have their own genetic children. Alexander spoke on the phone recently to Wired News to help put the cloning madness in perspective.

Wired News: We hear news about stem cells every couple of weeks. Why should we care about this new study?

Brian Alexander: A couple of things. First, it's in *Science,* which means it's gone through a rigorous peer review, whereas ACT (Advanced Cell Technology, a company concentrating on therapeutic cloning) just issues press releases. Also, judging from these numbers, the results are not flukes. They've got a system that apparently works and yields 29 percent blastocysts (an embryo developed to the point where researchers can extract stem cells), which is very good. They're getting all the way to blastocysts -- nobody had ever claimed in any legitimate forum that they got blastocysts from adult human somatic (not reproductive) cells.

WN: The biotech company Advanced Cell Technology has been making a lot of noise in the past few years about its advancements in cloning human embryos in order to derive stem cells from them. How does this latest research compare with ACT's work?

Alexander: This is significantly more advanced. But I don't want to diminish some of ACT's accomplishments, like their work in parthenogenesis. That's a big one. And some of the PR wars they have fought. They are derided oftentimes, but they've made people think about this sort of stuff in ways that those following a more traditional route haven't -- they haven't garnered the big press.

(Press attention) hasn't always been good for science, which is why scientists get pissed off at (ACT) all the time. But it has made some of the message come through that this is a potential therapy. The sci-fi scary bullshit that people think about cloning has been going on ever since Dolly and then picked up again after the $(You)^2$ *Wired* magazine story came out. Some of the real message has gotten through despite the nationwide freakout.

WN: Will this development elicit more freakout?

Alexander: Yes, it will, in certain quarters. But just like every other time that cloning has made news, many people will eventually come around and think, "Oh, OK, I get what they're doing." Just because a congressman stands up and says, "They're going to create baby farms!" doesn't mean everyone is going to believe that.

WN: Will it spur the legislation that's been languishing in Congress?

Alexander: I think yes and no. I think that the people like Dave Weldon (R-Florida) and these guys who want to ban this sort of stuff are going to use this as ammunition and say this is suddenly very urgent, we have to stop it because we're going to have cloned babies crawling the Earth. But I also think that the fact that we all didn't die since a cloned embryo was made will cause the people in Congress who favor research to point out the fact that they got stem cells out of it and this is potentially important.

I think the world is kind of at a standoff, (as evidenced by) what happened in the United Nations some months ago. Nobody is sure what to do about this at the moment, and I think that has been good for science because it's left them free to do some of this stuff. I would not be surprised if, despite the urgency that some are going to feel that this law in Congress has to get passed, that we still will have a standoff at the end of the day.

WN: In your book *Rapture: How Biotech Became the New Religion*, you say that stem-cell therapies are likely 20 years off. Does this bring the therapies closer to reality?

Alexander: No. I think what happened is very important, but remember all that's happened here is that they've managed to get stem cells from an embryo that is a clone of an adult cell. We already have had, since 1998, lines of human embryonic stem cells, and people have been trying to see how we can make some sort of therapy out of those cells. So this doesn't actually move that that much further along. What it does do is this: Should such a therapy be developed, we can make an exact match for the patient. But there are a lot of issues before you start shooting stem cells into people.

Also, one thing that people forget is that someone has to figure out how to make money at this. Every single patient, if you use cloning or somatic cell nuclear transfer as the method, needs their own cells. It's a service, not a product. It's a one-off. And somebody's got to figure out how to make money by taking cells from the person, creating eggs, getting the stem cells, then shooting them back into the patient. You have to do it for every single person.

Also, just injecting stem cells into people can be dicey. One way they test if a stem cell is a stem cell is if they make a tumor. So you can't just start shooting stem cells into patients. The point being: This all might work, but there's a long road between then and now.

And it's possible that there may be a better way to do this. It might be done by taking cells already in our body and switching their function. One example is Christopher Reeve. He is somehow managing to gain some function back that people didn't think he was going to get, thanks to this intense program he's in. They think what's happening is some cells are being recruited and switching their jobs. It's possible his body is regenerating, in a small way, and this is whole Bill Haseltine (CEO of Human Genome Sciences) regenerative medicine notion -- that our own bodies can be research materials.

WN: Does this paper make it easier for mavericks who want to use cloning technology to make babies? Should we be worried about that?

Alexander: Yes, I think it makes reproductive cloning that much more likely. And no, we shouldn't be worried about that.

WN: Why not?

Alexander: Two reasons. One, the people saying they're trying to do it are -- their statements are dubious. And it's fair to say no one takes them seriously because they've shown no evidence that they've made any progress. Second, people who would be in a position to do this are either being so very quiet about it that nobody will ever know, or they feel that it's unethical to try in the first place.

And third, so what? So what if somebody makes a baby? You end up with a baby. People will say, "How can you be so callous? What about all the possible deformities?" Yes, that's why people think it's unethical to try this. But keep in mind we just had a baby born with two heads. Nature does crazier stuff than we can ever think of to do.