

# Health & Science

## Don't worry: a brain still can't be cloned

Explorers returning from distant lands tell of aborigines so afraid of cameras that they recoil from the sight of a lens as if they were looking down the barrel of a gun. Taking their picture, they fear, is the same as stealing their soul.

You might as well just shoot them dead on the spot. Knowing that a photograph is only skin deep, people in the developed lands find such terror absurd. But the fear that one's very identity might be stolen, that one could cease to be an individual, runs deep even in places where cameras seem benign.

The queasiness many people feel over the news last week that a scientist in Scotland has made a carbon copy of a sheep comes down to this: if a cell can be taken from a human being and used to create a genetically identical double, then any of us could lose our uniqueness. One would no longer be a self.

There are plenty of other reasons to worry about this new divide the biologists have trampled across. Nightmare of the week goes to those who imagine docile flocks of en-

slaved clones raised for body parts.

But the most fundamental fear is that the soul will be taken by this penetrating new photography called cloning. And here, at least, the notion is just as superstitious as the aborigines'. There is one part of life biotechnology will never touch. While it is possible to clone a body, it is impossible to clone a brain.

That each creature from microbe to man is unique in all the world is amazing when you consider that every life form is assembled from the same identical building blocks. Every electron in the universe is indistinguishable, by definition.

You can't tell one from the other by examining it for nicks and scratches. All protons and all neutrons are also precisely the same.

And when you put these three kinds of particles together to make atoms, there is still no individuality. Every carbon atom and every hydrogen atom is the same. When atoms are strung together into complex molecules — the enzymes and other proteins — this uniformity begins to break down. Minor variations occur.

But it is at the next step up the ladder that something strange and wonderful happens. There are so many ways molecules can be combined into the complex little machines called cells that no two of them can be exactly alike.

Even cloned cells, with identical sets of genes, vary somewhat in shape or coloration. The variations are so subtle they can usually be ignored. But when cells are combined to form organisms, the differences become overwhelming. A threshold is crossed and individuality is born.

Two genetically identical twins inside a womb will unfold in slightly different ways. The shape of the kidneys or the curve of the skull won't be quite the same. The differences are small enough that an organ from one twin can probably be transplanted into the other. But with the organs called brains the differences become profound.

All a body's tissues — bone, skin, muscle, and so forth — are made by taking the same kind of cell and repeating it over and over again.

But with brain tissue there is no such monotony.

The precise layout of the cells, which neuron is connected to which, makes all the difference. Linked one with the other, through the junctions called synapses, neurons form the whorls of circuitry whose twists and turns make us who we are.

In the reigning metaphor, the genome, the coils of DNA that carry the genetic information, can be thought of as a computer directing the assembly of the embryo. Back-of-the-envelope calculations show how much information a human genome contains and how much information is required to specify the trillions of connections in a single brain.

The conclusion is inescapable: the problem of wiring up a brain is so complex that it is beyond the power of the genomic computer.

The best the genes can do is indicate the rough layout of the wiring, the general shape of the brain. Neurons, in this early stage, are thrown together more or less at random and then left to their own devices.

After birth, experience makes

and breaks connections, pruning the thicket into precise circuitry. From the very beginning, what's in the genes is different from what's in the brain. And the gulf continues to widen as the brain matures.

The genes still exert their influence — some of the brain's circuitry is hardwired from the start and immutable. People don't have to learn to want food or sex. But as the new connections form, the mind floating higher and higher above the genetic machinery like a helium balloon, people learn to circumvent the baser instincts in individual ways.

Even genetically identical twins, natural clones, are born with different neural tangles. Subtle variations in the way the connections were originally slapped together might make one twin particularly fascinated by twinkling lights, the other drawn to certain patterns of sounds.

Even if the twins were kept in the same room for days, these natural predilections would drive them each in different directions. Experience, pouring in through the senses, would cause unique circuitry to form.

Once the twins left the room, the differences between them would increase.

Send one twin around the block clockwise and the other counterclockwise and they would return with more divergent brains. For artificial clones the variations would accumulate even faster, for they would be born years apart, into different worlds.

Photography is only skin deep. Cloning is only gene deep. But what about the ultimate cloning — copying synapse by synapse a human brain?

If such a technological feat were ever possible, for one brief instant we might have two identical minds. But then suppose neuron No. 20478288 were to fire randomly in brain 1 and not in brain 2. The tiny spasm would set off a cascade that reshaped some circuitry, and there would be two individuals again.

We each carry in our heads complexity beyond imagining and beyond duplication. Even a hard-core materialist might agree that, in that sense, everyone has a soul.

## Tricked On To Heroin

Americans are turning to heroin in alarming numbers all due to some very brilliant marketing strategies of the drug cartels. What is this strategy? Get heroin on to the streets in concentrations strong enough to snort (sniff) or smoke so that injecting heroin is not necessary to experience its alluring effects. Street heroin has become available in much stronger concentrations of 60 to 70 percent pure or higher, making the snorting and smoking of heroin possible.

In the past heroin was diluted to as little as 5% of less for the purpose of increasing the profits made by drug dealers and heroin was almost always used intravenously. Smoking or snorting heroin was not very effective and rarely done, as the drug is so expensive. With today's heroin, smoking and snorting it has become popular and even chic in the club scene.

We are now seeing the social barriers of the user of heroin come down, even though there is no drug with a more sinister reputation than heroin. Youth are more willing to snort or smoke this drug.

In the United States there are an estimated 600,000 heroin addicts with the Drug Enforcement Agency (DEA) estimating that 2.3 million Americans over 12 have used heroin in the U.S. With the social barrier of having to inject heroin avoided, we are seeing people more willing to try heroin by snorting or smoking the drug. Of course, as they become addicted to heroin, guess what happens? You guessed it. They begin to inject the drug as the preferred method of use!

Take the story of Eric T. and what happened to him. Eric is now getting help at Narconon Chilocco New Life Center in Oklahoma, but before Eric arrived at Narconon, he had become addicted to heroin.

"When I was sixteen I started to

drink alcohol and smoke pot on a pretty regular basis. After a while the high I got from marijuana wasn't enough and I started taking LSD and eventually cocaine. The cocaine began to make me very jittery and paranoid and this bothered me. My cocaine connection also sold heroin and asked me if I wanted to try it. At first I said "no", but a couple of days later I tried heroin for the first time by sniffing it. This was the beginning of the end for me. I got so high the first time I did it I vomited for a couple of hours and passed out. I loved how it made me feel so I did it again, and again, and again. Before I knew it I was spending about \$100 a day sniffing heroin.

"I told myself I would never shoot (inject) heroin because I didn't like needles. My fear soon gave way because I wasn't getting as high snorting heroin. The first time I popped (injected) two packets I went out for about ten minutes. I woke up with my friend giving me mouth to mouth resuscitation and a bunch of girls I knew were around me crying. At first I didn't know what was going on but when my friends told me I had turned blue and wasn't breathing, I realized that I was dead and had been revived!

"Even after my near death experience I still used heroin and didn't care. I made me feel so good that I didn't give a @#\$\*!#% about anything, except that needle. After shooting heroin for a year straight and being sick a bunch of times I decided to get some help. I tried methadone but it made me feel worse and I quit and went back to heroin. Eventually, I heard about Narconon and I went to them for help. At first I had a hard time, but I now know that I have the power to be happy and drug-free."

Eric became a heroin addict without having to use a needle. He later succumbed to using the needle only

after having become addicted.

You may have noticed an interesting pattern of use in Eric. The back and forth that can often be seen in the use of stimulant and sedative type drugs, following addiction to the gateway drugs. For example, the stimulation of methamphetamines is solved by sedation with alcohol, GHB, Rohypnol, and other downers. Stimulation with cocaine and then sedation with heroin. Or stimulation with LSD, ecstasy or herbal ecstasy, and sedation with alcohol, heroin or other sedative. This use of uppers then downers can often be combined, sometimes with deadly results. Remember the famous example of "speedball" use (heroin and cocaine injected at the same time) by John Belushi that killed him. This may have been behind the death of River Phoenix too.

The ingestion of drugs takes place in several ways. There is the drinking or swallowing of liquids, powders, and pills. There is the sniffing of powders and vapors, as in the case of inhalants such as glue, paint, paint thinner, gasoline, and other industrial poisons. Drugs can be injected under the skin or into blood vessels. Smoking of tobacco and marijuana has long been done. There are even pharmaceutical drugs administered as enemas; and some drugs can be absorbed through the skin such as LSD and nicotine patches.

What became popular in the 1980s was the smoking of drugs that were not being smoked before. The smoking of heroin (chasing the dragon), the smoking of cocaine (crack), and the smoking of methamphetamines (ice). All three forms of these drugs needed to be in much purer concentrations for smoking to be effective. This holds true for snorting of heroin as well. Knowing this, the drug cartels responded, predicting larger number of consumers would mean

greater profits.

The quickest and most dangerous drug route is injecting a drug in a blood vessel as the results are instant. Once an overdose, too much of a drug, is injected, there is rarely any turning back. The effects of smoking a drug also occurs very rapidly through absorption of the drug via the lung tissue directly into the bloodstream, bypassing the digestive system altogether. While the majority of the drug-using population is not willing to use drugs intravenously, they are willing to smoke or snort a drug. In the case of heroin, they usually begin to inject the drug once addiction occurs.

Even though "crack" or "ice," and "Persian heroin" are just different forms of cocaine, methamphetamines and heroin, the effects of these drugs when smoked are somewhat different.

The coating of poisonous drugs on the delicate tissues of the lungs cannot be positive. How much damage occurs is not fully known. You are also at greater risk of overdosing from smoking these three drugs. Only injecting them would be more dangerous.

There is also now ample evidence that drugs and other toxins can residually store in the fatty tissue of the body for long periods of time. The smoking of the oil forms of these drugs are cause for concern that more of the drug will remain locked in the fatty tissue. Narconon utilizes a very unique sauna sweat-out detoxification program developed by author and philosopher L. Ron Hubbard to sweat these drug residues out of the body with tremendous results.

As for today's heroin, the ploy of putting high potency heroin on the streets is a trick. There is no other way to put it.

Heroin is heroin, and no matter how you consume it the danger of addiction looms closely. What we almost always see with the advent of addiction through the sniffing or smoking of heroin is a shift to injecting the drug. The trick is complete!

Narconon International is a network of substance abuse program and treatment centers located around the world. For more information on Narconon services or help call 1 (800) 468-6933.

## Wyden announces Multnomah AIDS/HIV grant

U.S. Senator Ron Wyden (D-Oregon) today announced that Multnomah County will receive \$1.9 million in federal assistance to help deliver and enhance HIV-related outpatient, ambulatory health and support services throughout the county. The money was awarded to the Multnomah County Health Department as part of the Ryan White Comprehensive AIDS Resources Emergency Act which Wyden championed when he served in the U.S. House of Representatives.

Wyden said the grant, which was awarded to Multnomah County by the U.S. Department of Health and Human Services' (HHS) is being used to provide medical assistance for those with AIDS or those who are HIV-positive.

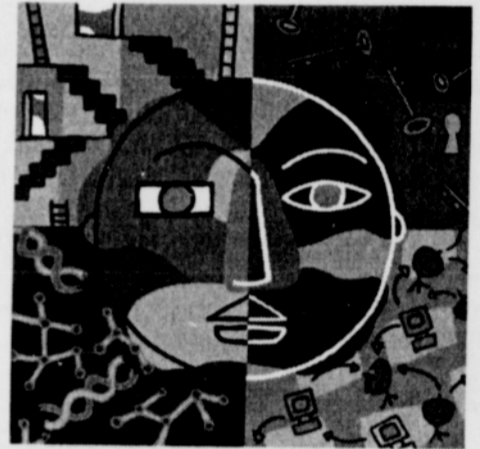
"This grant provides federal funding for home and community-based care, continuity of health insurance coverage and payment for pharmaceuticals. Today's award shows a continuing commitment to community-based AIDS funding on the part of this

Administration," said Wyden.

The Ryan White Act was authorized during Wyden's tenure on the House Commerce Committee. Since then, Wyden has been dogged in his attempts to obtain funding for the growing number of Americans who are infected with this terrible disease.

Wyden also said, "I will work hard to make sure we continue to fund community-based AIDS programs so that HIV-positive Oregonians have access to necessary medical support and treatments."

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### ANNOUNCING THE

## Northeast Eye Center

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The Pacific University College of Optometry is pleased to announce the opening of its Northeast Eye Center, conveniently located in Northeast Portland at the Multnomah County Health Center—corner of MLK Jr. Blvd. and Killingsworth. Pacific University faculty and staff offer a full range of affordable state-of-the-art vision services provided in a caring and compassionate manner.

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- Examinations for eyeglasses and contact lenses
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To schedule an appointment or free screening and for more information about vision care services, please call 248-3821.

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5329 N.E. MLK Jr. Blvd., Portland  
(Corner of N.E. MLK and Killingsworth)

**248-3821**