

# REPUGNANCE, DENIAL, AND FEAR

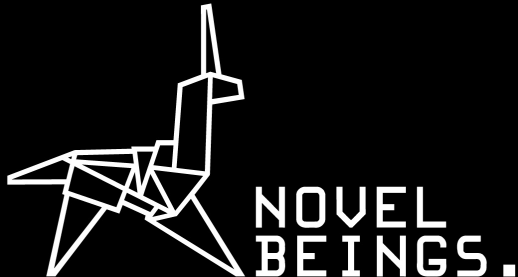
## SOCIETAL CHALLENGES FOR REGULATION OF NOVEL BEINGS

David Lawrence

Durham University Law School

[David.lawrence@durham.ac.uk](mailto:David.lawrence@durham.ac.uk)

[@biojammer](#)



- Public opinion likely to factor in legislative decision-making on Novel Beings and precursor technologies
- These debates are often emotive and reactionary
- Can influence policy
- Should we try to circumvent public opinion to achieve useful regulation?



# FILM, FICTION, AND FRIGHTENING IMAGERY

- Endless media controversies
  - ‘three-parent babies’
  - human cloning
  - genetically modified organisms
  - He Janqui affair
  - IVF
  - etc...
- Usually weaponizing dystopic fiction
- Fiction allegories not always bad- we do this too!

## Mad scientists are cloning dinosaurs as weapons of the future

**E**GGHEAD SCIENTISTS are secretly cloning dinosaurs — and terrified humans may soon be fleeing for their lives from gigantic monsters belonging to the prehistoric past.

Realizing that a nuclear war could end the world, both U.S. and Soviet scientists plan to conquer the world with armies of destructive monsters.

This is the inevitable analysis of alarmed scientific and religious leaders, as well as environmentalists.

According to a respected source close to the Washington scene, genetic material from long-dead dinosaurs found deep frozen in Siberia, China and the Antarctic is already being introduced in clandestine laboratories.

Word of the dangerous experiments dinosaurs being conducted in secret hideouts began to leak after disclosure that scientists in California have reproduced gene fragments from an extinct relative of the horse and zebra.

And the Washington insider: "These experiments — on the Berkeley campus of the University of California — are, of course, perfectly legitimate, and I can understand the excitement over the possibilities of someday reproducing a long extinct species."

"But it doesn't take much imagination to conceive of the horrors and potential disasters that could be unleashed if the

workshop experiments on gene fragments extracted from re-coverted dinosaur remains.

"We are moving here from the province of science to the province of God, and it could mean the ultimate destruction of mankind," he warned.

"These Siberian islands disappeared from this Earth more than 200 million years ago."

The magazine's impertinent with nature has also drawn fire warnings from the

Mad scientist cloning dinosaurs as weapons of the future

with DNA, the building block of life on earth. It is obtained from an animal's cell's nucleus.

The genetic material was extracted during the late 1980s by a team of South African scientists who wanted the genetic code for cloning.

Meanwhile, the first dinosaur is expected to be cloned in a laboratory in the United States before a year's time, says a source familiar with laboratory experiments.

**Report**

Significantly, the Berkeley scientists said in a report in the American Society of Biological Chemists, the startling results with a dinosaur gene fragment.

"The initial success reported today may open a way to reconstruct genetic material from the muscle of long-extinct animals, as well as the bones and teeth of species that died out millions of years ago."

The report was prepared by Dr. Russell M. Mittermeier, leading authority on avian and laboratory specialists of DNA.

**Monsters would be last line of defense in nuclear war**

By LEWIS CLAYTON

Mad scientist cloning dinosaurs as weapons of the future



**FLESH-EATING BEASTS** disappeared from Earth over 200 million years ago.

known to be shaken by the prospect of the huge beasts lumbering through our remaining forests, swamps and coasts.

Nedrick Turner, a rapper and hunting guide in the Pacific Northwest, who is a relative to the dinosaur.

"I can tell you how much meat there might be in this story, but I've heard it. And there's no way I want to shake the outdoors with those things. They're animals!"

The center of the plan is to bring back the dinosaur by the Berkeley experiments provide chilling proof that the time when dinosaurs roamed with the Earth may be fast approaching.

The California scientists reported they were working



# GATTACA

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## DAWN OF THE BRAVE NEW WORLD BABY

As first British child designed to be cancer-free is born, critics ask: Where will the meddling end?

**THE** first British baby designed to be free of breast cancer has been born in an ethical storm. The child will grow up without a gene which has triggered breast cancer in her mother's family.

The gene was removed from the embryo after she planned additional pregnancies. The embryo was created in a laboratory and transferred to her mother's uterus.

The embryo was created by using a technique called zygote donation. This involves using a donor egg and sperm to create a zygote, which is then fertilized with the father's sperm. The resulting embryo is then transferred to the mother's uterus.

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Then another FREE costume drama every day



## Test-Tube Babies

The 'Brave New World' Of Human Pregnancy Is Coming

**EDWARD EDLSON**  
 New York News

NEW YORK — Next to the Lovers stood the Materialists. The procession advanced; one by one the eggs were transferred from the test tubes to the larger containers. Hereafter, date of fertilization, membership of Bukharin's group — were transferred from test tube to bottle.

"Within a mere 10 to 15 years women will be able to buy a tiny frozen embryo, take it to the doctor, have it implanted in her cervix, carry it for nine months and then give birth to it as though it had been conceived in her own body."

The purchase would also be told in advance the color of the baby's eyes and hair, its sex, its probable size at maturity and its probable IQ.

"All I want is to help mothers whose child-bearing mechanism is slightly faulty."

The first quote is from Aldous Huxley's 1932 science fiction novel *Brave New World* in which test-tube babies were produced in batches. The second is from a meeting held a few years ago on test-tube fertilization. The third is from Dr. Patrick Steptoe, the British physician whose work helped achieve what seems to be the first successful human pregnancy resulting from test-tube fertilization.

What's on. The Brave New World is upon us. And so are novel and ethical problems of a new and unprecedented sort.

The Kenes Aun Quilman case gave a foretaste of those problems. Suddenly, the courts had to consider the question of a newly machine-made man somewhere between life and death. It took a legal decision to allow physicians to turn off the life-sustaining machines for the comatose Man Quilman.

And consider these:

In Philadelphia, scientist Barbara Mintz has been able to breed mice by using normal and cancerous cells. In fact, one parent of the mice is a cancer.

Cancer researchers have found that some parents to be who ask for tests to detect genetic disease, really have no selection in mind. If the test shows that the baby is not the sex they want, they obtain an abortion.

In several laboratories, neuroscientists have found that different functions of the brain can be affected by specific drugs or even foods. The possibility of drugs that will change mood, thinking power or memory is very real. Several institutions are working on an artificial placenta, something that would bring a lot closer to the birth of a child than the test-tube babies.

The prospect of human beings engineered by Huxley. An arti-



The age of test-tube fertilization is not without its ethical problems. Perhaps half a dozen researchers in the United States want to try it — and they're all waiting on a ruling from the National Ethics Advisory Board.

agency to talk about the ethical issues involved in cloning and in vitro reproduction test-tube fertilization. It was rejected as being too much pig in the sky.

"I talked to the grant officer a few days ago and he was laughing because everything we mentioned in the application is coming true."

Not everything's happening faster than expected. Genetic engineering—the insertion of genes into the cells of animals—has turned out to be more difficult than had been anticipated.

The problem isn't getting the genes into the cells but getting the genes to work properly. Higher animals such as

When you consider the ethical and moral dilemmas that have arisen from what are called standard medicine — abortions, birth control, drug testing, experiments with children or institutionalized persons — you can see that the ethics have their work cut out for them.

Indeed, one of the less publicized features of the biomedical revolution has been the birth of an ethics industry to deal with the tricky questions raised by new laboratory achievements.

The test-tube baby story is an excellent example of the ethics industry in action. Some backtracking is needed to tell the story.

In 1974, Congress created a National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The commission has written guidelines for research with children and with prisoners. In 1979, it recommended the creation of a National Ethics Advisory Board to consider, among other issues, in vitro fertilization; the attempt to remove an egg from a woman's body, fertilize it in the laboratory, and implant it to achieve a pregnancy.

Perhaps half a dozen researchers in the United States want to try in vitro fertilization on humans. All of them have submitted applications to the ethics committee of their institutions. These committees, in turn, are waiting for a ruling by the National Ethics Advisory Board.

The 14-member board, which came into existence early this year, is still getting organized. It has scheduled a meeting on the in vitro fertilization issue for September. According to Father Richard A. McCormick, a board member, the meeting could be a critical one, since it will set a precedent for the consideration of future issues.

"It was clear whether we're going to undertake serious studies and issue scholarly monographs or present white papers to the Secretary of Health, Education and Welfare (HEW) the board has had to meet. How we will go about it will become clear after our study of in vitro fertilization."

So far, the board has held two meetings, at which it heard the heads of all the agencies in HEW describe the key issues that would come before the board. No clear list of priorities emerged from all the meetings, Father McCormick said. What is clear is that the board's members include lawyers, physicians, scientists and public representatives — will have no shortage of issues.

Aside from the creation of such national review boards, the past decade has also been a proliferation of university courses on biomedical ethics, and the establishment of self-contained institutes devoted to ethical studies.

## She Could Have Been The First

**NEW YORK (AP)** — The doctor who planned to implant an embryo fertilized in a test tube into the womb of a woman told a lawyer the procedure was an experiment and that he had been recommended for censure on the experiment.

The letter from Dr. William Sawyer III, of New York Hospital, was introduced into evidence Friday in defense lawyers in the \$1.5-million lawsuit by Doris F. Zeo against Columbia University, Columbia Presbyterian Medical Center and the center's obstetrics chief Dr. Raymond Vande Walle.

Sawyer wrote to the lawyer two weeks after destruction in 1975 of the test-tube embryo.

Sawyer had denied during the U.S. District Court trial that he was experimenting with Mrs. Del Zo. He insisted the test tube plan was a medical procedure. He also denied he ever had been recommended for censure.

Despite the apparent conflict between the letter and the doctor's testimony from the witness stand, Sawyer insisted on the stand Friday that he is telling the truth.

It was not made clear why Sawyer had furnished the information to the lawyer, who is not connected with the damage suit brought by Mrs. Del Zo and her husband Anthony Zeo, 13, 1975, four days before it was to have been implanted in her womb. He has said the mother's life was in danger.

Although she had a child by a previous marriage, Mrs. Del Zo said her fallopian tubes had become blocked and that she was unable to conceive with her second husband.

Had the experiment proven successful, Mrs. Del Zo



# Has humanity already lost control of artificial intelligence? Scientists admit that computers are learning too quickly for humans to keep up

- Last year, scientists made a driverless car that learned by watching humans
- But even the creators of the car did not understand how it learned this way
- In another study, a computer could pinpoint people with schizophrenia
- Again, its creators were unsure how it was able to do this

By SHIVALI BEST FOR MAILONLINE

PUBLISHED: 16:16, 11 April 2017 | UPDATED: 16:20, 11 April 2017

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From driving cars to beating chess masters at their own game, computers are already performing incredible feats.

And artificial intelligence is quickly advancing, allowing computers to learn from experience without the need for human input.

But scientists are concerned that computers are already overtaking us in their abilities, raising the prospect that we could lose control of them altogether.

Scroll down for video



Scientists are concerned that computers are already overtaking us in their abilities, raising the prospect that we could lose control of them altogether. Pictured is the Terminator film, in which robots take over - a prospect that could soon become a reality

Last year, a driverless car took to the streets of New Jersey, which ran without

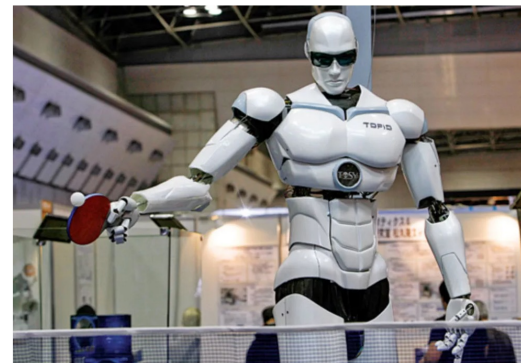
## ROBOT TAKEOVER

Technology

## A Ping-Pong-Playing Terminator

Your table-tennis dynasty is toast

By Brooke Borci February 16, 2010



**MATCH POINT**  
Kim Kyung-Hoon / Reuters

Meet TOPIO 3.0, the ping-pong-playing robot. Made by Vietnam's first-ever robotics firm, TOSY, the bipedal humanoid uses two 200-fps cameras to detect the ball as it leaves the opponent's paddle.

TOPIO's brain—processors and an artificial neural network—analyzes the ball's path to choose the best return. Last fall, TOPIO 3.0 debuted at the International Robot Exhibition in Tokyo.

AUG 5, 2014 @ 01:00 PM 33,656

The Little Bl

## Elon Musk Warns Of Terminator Tech



**Paul Rodgers**, CONTRIBUTOR

I cover general science news. [FULL BIO](#)

Opinions expressed by Forbes Contributors are their own.

Superintelligent computers will likely exterminate humanity, predicts the boss of Tesla Motors and Space X.

Technology entrepreneur Elon Musk warned of the demise of the species in a pair of tweets on 3 August promoting his summer reading on the looming threat from artificial intelligence.

"We need to be super careful with AI," he said in one. "Potentially more dangerous than nukes."

Another said: "Hope we're not just the biological boot loader for digital superintelligence. Unfortunately, that is

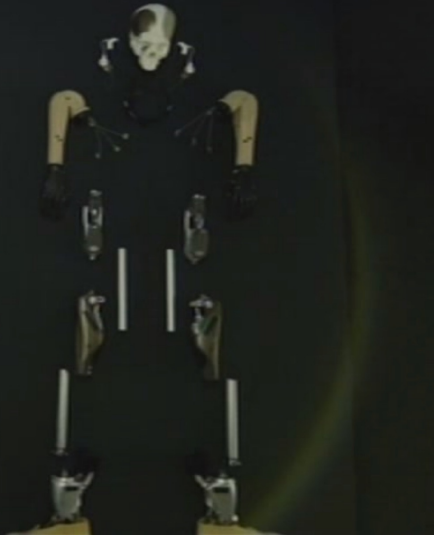




# STEERING PERCEPTIONS

4<sup>th</sup>

How to Build A  
Bionic Man



- Almost always negative portrayals
- Should we even be surprised that people fear many emerging technologies?
- Presentation becoming endemic and habitual

BRITAIN'S  
BIGGEST  
EVENING  
SALE

Evening News

LONDON: THURSDAY JULY 27 1978

LATE  
SPECIAL  
CITY PRICES

Meet Louise, the world's  
first test-tube arrival

# SUPERBABE



Wide-eyed Louise Brown pictured in hospital 18 hours after she was born. Today she's doing well. See Page Three

- Scientists often make serious efforts to control the narrative
  - IVF- Steptoe, Edwards, Purdy, Bavister
  - Seen as unnatural, threatening to make the mother obsolete...
  - 10 years of promoting as fulfilling a 'medical need'
  - From 'disturbing' in 1968 to 'Superbabe' in 1978
  - ~10m births to date!

# REPUGNANCE, DENIAL, AND FEAR

- The future is uncertain!
  - Novel beings threaten *Homo sapiens*' dominant status!
    - Maybe repugnance, denial, fear are unsurprising...
    - 'Yuck factor'- 'wisdom of repugnance'
    - Fear of loss?
    - Xenophobia?
      - We know better... *but*...
      - The desire to protect ourselves is understandable (sometimes)
-



- But should we be worried?
  - Negative language infiltrates policy spheres
  - Eg- UK Mitochondrial Replacement Therapy debates 2014-15
    - ‘Three parent babies’ in UK House of Commons debates

UK Parliament

Hansard

House of Commons

UK Parliament > Hansard > Commons: 12 March 2014 > Westminster Hall > Mitochondrial Transfer (Three-Parent Children)

## Mitochondrial Transfer (Three-Parent Children)

MAR 12 2014

Volume 577: debated on Wednesday 12 March 2014

Download text

Previous debate Next debate

3.58pm

Column 164WH

Jacob Rees-Mogg >  
(North East Somerset) (Con)

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**Bob Stewart >**

(Beckenham) (Con)

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On that point, the worry that occurs immediately to me as I listen to my hon. Friend is that if someone does not know who the third or fourth person who created them is, through sheer chance they may well find themselves marrying their brother or sister.

Thomas Aquinas wrote in his “Summa Theologica” that

“the soul is in the embryo”.

I certainly believe that to be the case. It means that tampering with embryos is tampering with human souls —tampering with what sets us apart from animals. As Benedict XVI in the Instruction “Dignitas Personae” said.

- Prejudice can easily enter science policy
  - “The law, most of us would agree, should be **society’s protection against prejudice**. That does not imply that emotions play no legitimate role in legal affairs, for often **emotions help people to see a situation clearly**, doing justice to the concerns that ought to be addressed.”
    - Martha Nussbaum, ‘Danger to Human Dignity: the Revival of Disgust and Shame in the Law’ (2004) 50(48) The Chronicle Review B6
  - **Disgust/ repugnance** are occasionally legitimate... but often **unacceptable** jurisprudence.
    - Eg- criminalisation of homosexuality
  - Rarely a good guide in social change!
-

# NOVEL BEINGS, NOT-SO-NOVEL ATTITUDES

- It is up to us to decide how to act
- There is likely to be shared ground between us and Novel Beings...
  - ... even if we collectively do not recognise it
- We have perfect existing examples- Sandra, Cecilia, Happy...





- High stakes- comfort in repugnance, denial, and fear
- The 'other' is a threat and the media have papers to sell
- But we must remember the benefits of controversial science
  - IVF, MRT
- We can no longer rely on these old attitudes to form policy
- We have a great responsibility as the stewards of scientific progress

