



Science can purify religion from error and superstition. Religion can purify science from idolatry and false absolutes.

- Pope John Paul II

# DesignNer bAbies



# *In Vitro* Fertilization with Crispr-Cas 9

The technology is  
**HERE**

A decorative border at the top of the slide consisting of numerous vertical bars in various colors including red, green, blue, yellow, and orange.

# TIME HOW CRISPR DNA-EDITING WORKS



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2:23







# Time to visit the Geneticist



NO REFUNDS  
OR EXCHANGES  
ALL SALES  
ARE FINAL

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Any concerns?



Biotechnology Jan 10, 2019

## Congress is about to renew its ban on creating CRISPR babies in the US



In an effort to get critical parts of the US government funded, the House of Representatives is going to vote today on a bill, [H.R. 265](#), that would pay for health inspectors, food stamps, and drug approvals, according to [Politico](#).


It would also renew the prohibition on genetically modified human beings in the US.

**Baby ban:** Since 2015, the US has adopted language in funding bills that prohibits the Food and Drug Administration from considering any application to create IVF children from embryos that have been genetically modified. But it has to be renewed every year.

A UK survey conducted by the Royal Society found that 83% of participants were in favour of editing the germ line to treat incurable disease. But many drew the line at editing for 'enhancement': 60%, for example, were opposed to the idea of using heritable gene editing to improve intelligence.

Abha Saxena, a bioethicist at the University of Geneva, Switzerland, and former adviser to the WHO, hopes that consultations will continue, even if the ultimate goal of reaching a global consensus might not be possible. "Are we ever going to be ready? It's difficult to say," Saxena says. "But humanity has always been adventurous."

'CRISPR babies: when will the world be ready?' (Nature 570, 293–296; 2019)

A man with dark hair, wearing a blue button-down shirt, is shown from the chest up. He has his eyes closed and his mouth is open as if he is speaking or singing. He is sitting on a dark, quilted couch. The background is a plain white wall with two dark rectangular objects hanging on it. At the bottom of the frame, there is a black bar with white text.

Humans can be altered forever,

# Other Problems

## Crispr-Cas 9

- Lack of understanding of a gene's function throughout development
- Off-Target edits (not well understood, they are known to occur frequently)
- Edits to germline cells (sperm, egg, zygote) are new additions to the human gene pool
- Mosaicism (not all cells edited)

## IVF (in vitro Fertilization)

- On average 15 eggs combined with sperm (zygotes)
- On average 10 embryos created (viable 4-8 celled-humans)
- On average 3\* blastocytes (5 day old humans) implanted, others frozen
- Multi-fetal pregnancy reduction (when desired by parents)

\*The #'s of blastocytes implanted depends the clinic used, #'s are reducing

# Catholic Churches Response

The dignity of a person must be recognized in every human being from conception to natural death. (Congregation for the Doctrine of the Faith)

This includes embryos, blastocytes, successfully edited humans and "mistakes".

Any activity that reduces human life to a commodity is a violation of human dignity

# Role Play in Groups of Three

## Session 1

Ordered Child, Mom, Dad

## Session 2

Grandparent, Ordered Child, Ordered Child's Child

## Session 3

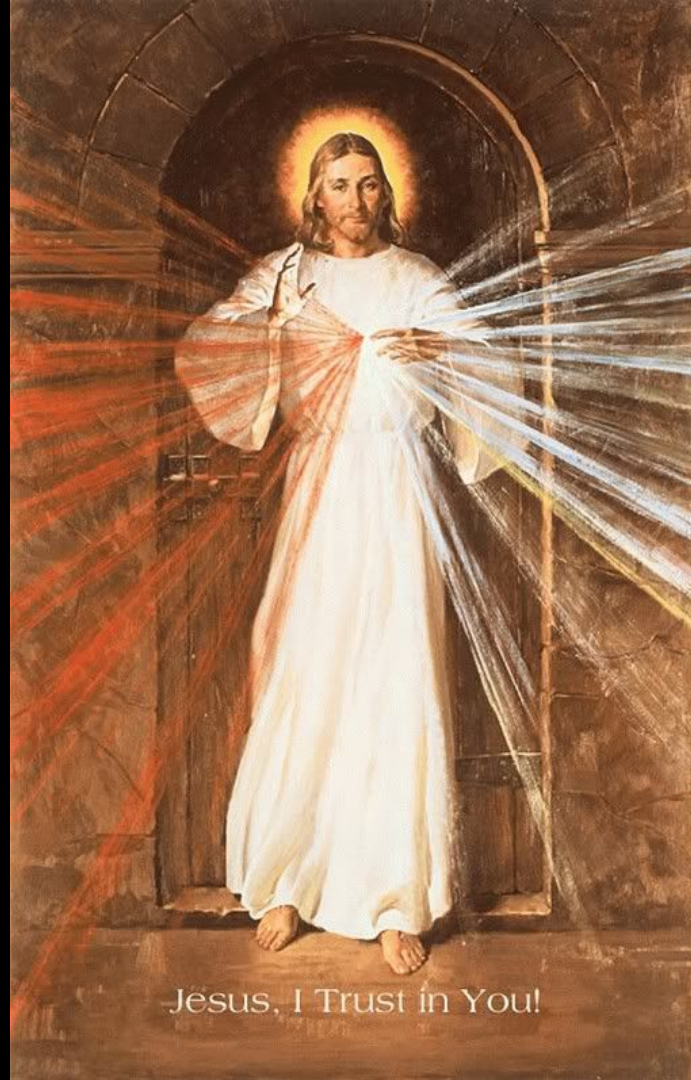
Ordered Child, Classmate who is Naturally Born, Classmate who is an Ordered Child of a Wealthier Couple



Should we do it?

# Catholic Churches Response

“When the human person is no longer seen as standing under God’s protection and bearing God’s breath, then the human being begins to be viewed in utilitarian fashion. It is then that the barbarity appears that tramples upon human dignity...The Fate of all of us depends on whether this moral dignity of the human person can be defended in the world of technology, with all its possibilities.” *In the Beginning... pages 45-46. Joseph Ratzinger*



For a Joyful and Fulfilling Life

The World Tell Us to  
Use People  
Love Things  
and Worship Yourself

Christain Catholicism Tells Us to  
Use Things  
Love People  
and Worship God