

Notes on the book
The end of sex and the future of human reproduction
Book by Henry Greely
Notes by William Gasarch

1 Introduction

Pre-implantation Genetic Diagnosis: Before planting an egg/sperm diagnose the genes to see what it will be like.

Key word for the entire book: Easy PGD.

He thinks it is coming and will be the standard way to make babies. Two points he overlooks

- 1) The Engineering may be harder than we think. Like jet packs
- 2) People will still have LOTS of unplanned babies. He analyzes this point but I think his estimates are too low.

He discusses in a neutral way what he thinks WILL happen and only at the very end his opinion.

2 Finance

If detecting diseases ahead of time really works than insurance companies might pay for it. Or the government might.

Will the children of rich people who can afford this be better off than the children of poor who can't? Widen the gap? Government subsidies?

Will life insurance companies subsidize or pay for easy PGD since it prevents other disease. Will they insist on it- perhaps not cover or charge high rates if you have kids the old fashion way.

Will government subsidize? Medical tourism?

3 Legal

USA- almost no regulation of current IVF UK- government must approve France- Hetero couples who are married or together for at least 2 years Italy- no more than three eggs at a time. Austria-bans donor eggs but not donor sperm Australia-Some states allow single women, some don't.

USA- almost no regulation lead to the octomom. USA- abortion laws are by state though allowed. Some states ban sex-selection abortions. North Dakota bans abortion for birth defects. Louisiana makes destroying fertilized embryos a crime so there are freezers full of the stuff.

Since Easy PDF prevents diseases and may lead to a smarter better population, some countries may demand it- tax brakes or make normal childbirth illegal- not clear how they can enforce that.

On the other hand, some countries may ban it altogether, especially Catholic countries. But USA has been very lax (too lax?) about IVF laws. The pro-lifers are not touching this issue since an infertile couple wanting to have a baby is also a pro-family thing. Plus they know they would lose that one terrible. The only thing they've really gone after is stem cells.

If the government says *only test/select for genetic diseases, not for cosmetic thing* this is a slippery slope. What is genetic? how bad does it have to be? Will you prevent doctors from talking about other traits (In some states a doctor is not allowed to talk about abortion. In some states a doctor is not allowed to ask if there is a gun in the house.)

Some people want a condition we consider negative (deafness is the only one mentioned in the book, though dwarfism may also qualify) given to their child. Should this be allowed? Are there other examples? I can think of wanting to have a gay kid or a straight kid.

4 Politics

In USA there has been NO anti-IVF movement. Why? Pro-lifers are pro-family Libertarian streak especially for medicine. Fed government has grid-lock problems. Fertility is a big business

I'll add one more- the opposition does not tie into any other themes from either political party. By counterexample The republicans are stuck with the pro-life and anti-gay movement since they bill themselves as moralistic. The Dems are stuck with affirmative action and welfare. But anti-IVF does not fit into any party.

Or perhaps I am putting the cart before the horse. Maybe there just isn't a big anti-IVF force in America to fit anywhere.

his prediction- once its allowed for getting around infertility (it already is) and then genetic testing/selection against genetic diseases there will be NO stopping it. Not testing is being a bad parent! Will America insist the

parents be straight (surely not). Married (that would seem odd also). SO from Infertility to serious genetic conditions to non-serious ones that are still health to cosmetic ones

Showing parents one part of genetic description but not others won't happen.

What might legislature regulate? Sex selection? Sex Selection unless its for balancing? Wanting kids with a defect (deafness is the only one really mentioned) Uniparents- get both male and female stuff from same parent. Public financing (or would a law like the Hyde-Amendment happen) Public financing- subsidies for the poor?

Only negative- if easy PGD is seen as close to cloning then it may get more opposition

Will there be a strong Christian negative on this- not likely since not with IVF now.

Other countries: Lets see what they do now:

Catholic countries that ban abortion: Malta, El Salvador Catholic countries that do not ban abortion: France, Spain, Uruguay Sunni countries limit assisted reproduction

Shia countries allow it more broadly.

Israel and Orthodox Jews strongly support assisted reproduction

Germany- with Nazi in their past shy away as it smacks of eugenics

East Asian countries do not have the high regard for the fetus that the west does so they may adapt easily- too easily?

5 Other technology

Designer babies- might help with the tossing out embryos problem. Artificial womb- will not being the womb affect the mother-child bond? Create whole new chromosomes- who will be the parents?

6 Too many choices, none optimal- pages 194-195.

What if there are tradeoffs- good at math, bad at sports or vice versa. Tall? Short? blond? If parents pick (say) good-at-math and the kid does not want to do math then will the parents be MORE disappointed then current

parents are when their kids don't live up to expectations? The kid can't say *I'm just bad at math*.

7 Changes to the family

Expectations: If parents pick (say) good-at-math and the kid does not want to do math then will the parents be MORE disappointed then current parents are when their kids don't live up to expectations? The kid can't say *I'm just bad at math*. Malpractice suits? Unreasonable executions limited by family counseling?

Will the kids be happy knowing that he is not living up to his parents expectations?

Some people who have Downs syndrome kids say it teaches them to love. (of course, some don't) So might be good for society to have such kids, but a big burden on the kids and the parents.

Society might be less sympathetic to the badly off if they didn't use the process since they could have.

Boon for Gay couples who want their own kids. Boon for older couples who want their own kids. May even be possible for people that are dead to have kids (some of that now with frozen embryos)

Close relatives could have kids without sex and without worrying about genetic problems.

Sperm and egg donors could be an even bigger business than it is now. This makes the *whose your daddy* question stranger. But note that even NOW sperm from Nobel prize winners and celebs has not caught on as a thing to desire. Might be since kids of Nobel's need not be themselves smart, but with Easy PDG might be easier to predict. In any case we'll find out how much genetics matters.

8 Fairness

Will people who did not have this process be disc against? Will the parents be shunned? Can people tell that they were born the old fashion way.

will people who had the process be disc against- they can't be in sports because of their advantage? (I find this unlikely)

Will this increase the rich-poor divide?

Book claims that those who have it will be better off than those that don't but not by THAT much. We are NOW healthier and better looking (really?) and smarter (the Flynn effect) than people were 100 years ago. The diff between then and now and the diff between now and easy pdg might be about the same. NOT a new species.

Subsidized? Restricted? All things are possible.

If subsidized you can't choose (say) eye-color.

Illegal clinics?

If certain groups (e.g, Catholics, Hispanics) don't use it and they have much higher percent of downs children (or only they have such kids) will society say *why should we pay for their old fashion ways*. So less care for them.

Sex selection- if women become rarer, will the problem correct itself? Time lag a problem. And the attitude that boys are better would still persist. Sex selection enforces current norms.

9 Coercion

Tangent- there was a time when sterilizing the mentally unfit was legal. Even if you are in favor of this, many people who were NOT mentally unfit were also sterilized.

Buck vs Bell- 1927. Oliver Wendell Holmes wrote the decision that the supreme court ruled that it IS legal for a state to compulsory sterilize those who are intellectually disabled. 31 out of 48 states had such laws. Indiana was the state where the lawsuit was done. The supreme court said YES to sterilization by 8-1 the 1 dissent being the courts only Catholic member.

Carrie Buck was pregnant (possibly by rape) and both her and her daughter were diagnosed as feeble minded but likely was not based on later test grades. Even so, Buck was ordered to be sterilized.

If a state could force its citizens to fight and die (The Draft) then could it force them to be sterilized? This is a legal question.

In earlier rulings the state said that parents have a right to determine how to Educate their children. Do they have the right to decide to HAVE children?

Skinner vs Oklahoma (1942): In Oklahoma if you had three felonies you could be sterilized. The court voted 9-0 that this was wrong. What changed

1) which crimes would make you sterilized and which would not- hard choices there and perhaps arbitrary. In modern world how would White collar crimes fit in?

2) Eugenics got a bad name from the Nazi's.

10 Eugenics

Positive Eug- get Nobel laureates to have kids

Neg Eug- prevent bad people (thats the problem - who decides) to have kids.

Some of his is still around:

Singapore supports Pos Eug- has love boat cruises for smart people.

China - only give a marriage license if neither party has serious infectious or genetic disease

Sometimes parents order a court to sterilize there feeble minded daughter for her own good. In America

11 Back to Easy PGD

Could be required- like vaccinations. In America even that seems hard to enforce. Or have religious exceptions (like for Vaccination)

could be banned

What would a country do if another country (say) required it or (say) banned it? Condemn them?

12 Objections to Easy PGD and why they are stupid

Religious arguments- against God's will. Most religions do not have definite teachings on this. The catholic church does since it has a hierarchy. Even so, this is not a good argument

Must plain wrong- the secular version of the religious argument. so many other species reproduce in so many bizarre ways (e.g., asexual, many eggs) that who is to say what is wrong here. Moreover, much of what humans do is not natural- most technology is not. Arbitrary to reject easy PVD but go

with other things like birth control. The catholic church may be consistent here, but even they use medicine.

Humility in the face of ignorance. This is a good argument to go slow and carefully, but not to abandon it.

Repugnance- hard to quantify

13 Enforcement and law

Supreme court has mostly ruled that reproduction and decisions for the children are a parents decision

Griswold vs Conn- illegal to ban contraception Roe vs Wade- illegal to make abortion illegal Meyer vs Nebraska, Wisc vs Yoder, others- parents can control kids education

Equal protection clause- would be possible to ban ALL easy pvg as applies to all. But this is unlikely. Any partial ban might run into EPC problems.

Talking about Easy PDG Courts have upheld that if the patient is getting money from the gov for medicine, doctor cannot bring up abortion. And in any case, in Florida, doctor cannot ask about gun ownership (Glocks vs Docs case)

Enforcing any kind of ban might be hard- can go underground, can go abroad, if states have diff laws can goto a diff state.