

Rachel: “Kayla, will you give me permission to synthetically create the perfect boyfriend?”

Kayla: “Rachel, are you talking about the research done by Shuichi Hoshika? Hachimoji DNA and RNA: A genetic system with eight building blocks.”

Rachel: “Yes, I am, that’s the one.”

Music Intro

Hey everyone, my name is Kayla

And this is Rachel with Dating Hypothesis, thank you so much for joining us today!

Creating the perfect partner, sounds like a dream but how would we go about doing it? And would that really make us happy? Is life more fun because we can’t control other people? We wake up each day solving puzzles as we navigate our emotional connection to another human being.

Add “Two Beats”

- **Begin conversation:** “Synthetic life. What is it?”

Maybe we could use hachimoji’s DNA to create the perfect boyfriend? This hachimoji DNA seems stable, hachimoji DNA has potential applications in bar-coding and combinatorial tagging, retrievable information storage, and self-assembling nano structures. The structure is able to support molecular evolution as in, it can reproduce.

Maybe the art on ancient egypt walls depicts alien DNA alterations? Humans with eagle heads? If they had hybridization down pat I wonder if the women wanted husbands with bird heads or if the men were like “ha ha, it would be so cool to have a fox head, I’d get so many chicks.”

I think we started manipulating breeding with Cross Breeding: You take two sexually compatible life forms and cross breed them to produce a hybrid. An example is the plumcot (plum and apricot),

Can we cross breed the perfect human boyfriend? Isn’t that what the child born 90,000 years ago was? She is the first direct evidence of interbreeding among Neanderthals and their sister group, the Denisovans. So technically we are the results of cross breeding to create the perfect partner. And every time a couple breeds today there is no way to know what traits will emerge. We have so many epigenetic possibilities. Nature vs nurture. How else can we tinker with life to improve upon it?

Mutagenesis: genetic changes that can switch, add, or delete nucleotides (those A,T,G and C bases in DNA), these genetic changes lead to new/ enhanced traits. Plant breeders use radiation or chemicals to induce a mutation. Radiation was used to produce a deeper color in the red grapefruit.

Off topic of creating synthetic life we are fairly adept at decimating life. In the 1950s, Knipling and Bushland eliminated the screwworm. They released sterile male screwworms into the wild. Females mated with sterile males producing infertile offspring. It reminds me of China's "one child" law that significantly reduced the number of females in the population. I guess that's one way to give a girl more mate potentials?

Protoplast Fusion: Sounds scary right? It's actually when you take two plant cells which have their hard cell walls removed and add a chemical encouraging the two cells to stick together. Then chemicals are added to help the two cells combine and exchange genetic information to create a hybridized plant cell. It's much like cross breeding, except it's done in a lab. But, again, that would take too long to create the perfect boyfriend.

Gene therapy helps people with rare diseases. Technically it is creating a better life form. The first human to be treated with gene therapy was a four year old girl in 1990. Gene therapy goes directly to the root cause of genetic disease. Edits out the faulty gene. This is closer to what I need. But the techniques they used in the 1990s were time consuming and erratic. And we don't know how to target personality, romance, or devotion genes.

Polyploidy: Humans, are diploid animals, we have two sets of homologous chromosomes. Polyploidy have 3 or more and common in plants and some insects. Inducing Polyploidy controls plant reproduction by making fertile crops sterile, like watermelon, to make seedless strains.

What most fascinates me is the Gene gun: Microscopic pellets of gold or tungsten are coated with gene fragments then shot at high velocity into plant cells or tissues. It's an erratic and random process but with luck, the pellet will pass through the cells (while the DNA fragment remains behind), becoming incorporated in the chromosome. And this is the best yet because it combines my desire to shoot my boyfriend in the head with my desire to change him into a better man.

OMG Raychel!

In 2003, Austin Burt wanted to couple mutation with a gene drive. Gene Drives overwrite the inheritance process. It won't matter which chromosome gets passed along: a "gene drive" drives itself forward getting passed down generation to generation no matter what the chromosomes do.

Cloning was approved for consumption by the FDA in 2008. I could combine cloning and gene therapy to clone George Clooney, (George Clony) combining his DNA with "someone who wants to marry when they are young" instead of waiting till they are half dead and an old fart to get married.

CRISPR has been commercialized since 2012 mixing and matching DNA like legos out of a toy box indiscriminate of what life form it comes from or goes into. You can mix plant DNA with Human DNA, bug DNA with Whale DNA, elephant DNA with armadillo DNA. Now with Hoshika's research we can improve upon these techniques and add DNA components that don't exist in nature.

CRISPR is my favorite topic. I could talk forever about it. The shit that stuff is capable of would scare people if they knew. And we can definitely make the perfect mate using CRISPR. Especially after we figure out what gene controls what in our DNA. CRISPR is more powerful than we are knowledgeable about our own DNA. If I could use it today to create the perfect boyfriend it would work better in an embryo which means I am 48. He would take 9 months to grow in a tummy. He would be ready for me in 17 years.

You mean 19. One in utero and 18 to mature.

Implants and Prosthetics are everywhere today. Could we use these techniques to fiddle together a well-made mate?

That depends on what parts of him you are looking to improve! Rachel, exactly which parts would you improve?

I do know 3 specimens that I could fiddle to create perfection. But mostly I would need neural implants more than prosthetics.

Neural implants come later in the episode. Right now we are talking about physical attributes. If your man is faulty you can ask him to get:

- Breast Implants, fillers, a nose job
- Cerebral Spinal Fluid, Shunt Systems, Cochlear Implants, Hernia Surgical Mesh Implants, Metal-on-Metal Hip Implants.
- Phakic Intraocular Lenses.

- Urogynecologic Surgical Mesh Implants.
Orthopedic implants (artificial hip, or bone screws)

Dermal Fillers, Pacemakers, Stents, Vagus Nerve stimulators, Valve replacements, longer term catheters, electrode arrays,

Don't forget there are plenty of way to fix us ladies right? Fuller breasts, more shapely hips, and even fancy little implants to make our uterus not grow their little spawns.

Women should never have to use birth control. In one year I can only get pregnant and carry one baby to term.

Did you know they have come up with temporary implants for that now? Just a tiny little block in the tubes to prevent the sperm even making it out?

A man can impregnate 3 to let's say 5 women every single day for 365 days that year. Unless his stamina is less than that. I mean, maybe he could only cum twice a day...that is still 720 children he could create if he can get 2 women per day to have sex with him. Part of creating the perfect man is giving all men **vasectomies** until they are ready to settle down and have kids.

I am going to email Elon Musk for an implant for your boyfriends? His neurolink program might be able to help you create the perfect boyfriend.

If you can create the perfect body plus program his mind, would that make you happy Raychel? Or is it the intrinsic nature of how someone chooses to treat us that makes us happy? Knowing it is their free will that chooses to be loving, kind, gentle, and romantic?

If we created the perfect boyfriend from scratch like from the womb we would have to wait till they grew up and were of legal age to date them. I would be 40 and he would be 20 if I knew what I wanted when I was 20 and made him then. I mean at that point why not just adopt a child and raise yourself the perfect boyfriend.

That is so fucking creepy rachel.

Yeah, it's way less creepy to order someone from a laboratory advertisement hand have them shipped to you when they are fully grown and that way you can order "all the parts" the way you want them.

Brings a whole new meaning to "mail order" spouse right?

Okay, Kayla, how would you order your man's parts?

Oh Rachel, quit snickering about my man's parts... I love him just the way he is. But what about you Rachel, what would you choose when you take your trip to build-a-bear... I mean boyfriend...

I would order mine with a tentacle penis. That thing would be able to do things I can't even dream of. I will be very happy when they finally market this shit.

Have you been watching Alien porn or something?

No. I heard there is such a thing but I haven't. But I have always loved the idea of more happening down there for me. I tend to date men who are afraid of the nether regions.

- If you created the perfect boyfriend would it be their body, mind, or both that you design? Do you have someone in mind already you would model them after? How smart would you make them? Would you consider it ethical to change DNA in individuals who have been found guilty of violent or sex crimes in order to prevent them doing so in the future? Write to us on facebook, twitter, or Instagram.

- Let's take a quick Commercial break, we will be right back. *(wait 3 seconds)* And we are back.

Commercial spot one: (14:58)

Add "Two Beats"

**** Resume conversation:** What is possible with DNA alteration?

Well, with biohacking rampant and crisper for sale on the internet to the average consumer, I think I will tinker with my boyfriend's DNA while he's asleep.

Is that even legal?

Probably not. But, "what besides my own morals" is stopping me from doing it? Right? Because it's probably not illegal! If I can buy this shit online and no one asks what I am doing with it then I can just walk down the street injecting people. Or I can tinker with my newborn or myself without telling anyone. If I order a ton of this stuff online and shoot myself up and get pregnant what are the potential ramifications.

Raychel, I understand a biohacker...only sees potential, and CRISPR is capable of changing the color of skin, hair, and eyes; producing sterilization and self terminating genes; and can wipe out an entire species when including a drive gene. But is it really safe for us to be tinkering with biology like that? I mean who knows what could happen, especially because you are not someone specialized in this, what if you create a child with extra limbs, or who is resistant to antibiotics or some other wild thing that would be far more harmful than good?

The term biohacking was first used in 1988 in the Washington Post. individuals were using biotechnology in their garages in home-made labs. And in 2005, Rob Carlson wrote: "The era of garage biology is upon us. Want to participate"?

The problem is Gene alterations is not just for adults anymore. It is marketed to kids on the toy market. Years ago, the Discovery DNA Explorer Kit for kids 10 and older \$80. Today you can get the newest gene editing kits online for \$159. They come with an example experiment that teaches molecular biology and gene engineering techniques. There is no longer a need for a garage, you can set up a lab in your living room. Summer camps and middle schoolers have been using these kits for years.

There was a dude who biohacked himself online and his name was Josh Zayner. If you want to read more about CRISPR which is Rachel's favorite subject, her favorite book on it is called "A crack in Creation" by Jennifer Doudna.

Did you know CRISPR was used to encode a digital movie into the genomes of a population of living bacteria? The movie was passed on to the next generation of bacteria in the lab.

Crispr is global. We use it to target genes and learn about what individual genes do. The most common application of gene targeting is to produce knockout mice. Gene inactivation/deletion/insertion is the best way to observe the biological role of a gene. Just target a gene and block its expression in a mouse. In the last twenty years 11,000 genes have been knocked out in mice, half of the mouse genome. A global effort is in place to knockout all 25,000 mice genes. Mice share 99% of the same genes as humans. So even though we are not mice it is a good way to guesstimate what the equivalent human gene does.

We engineer mice who don't get cancer. We produce mice with greater learning and memory capability. Once personality, behavior, and cognitive genes are understood, parents will opt-in for those advantages.

Chinese courts sentenced He Jiankui, the biophysicist who announced he created the world's first crispr gene-edited babies, to three years in prison for "illegal medical practice". A woman gave birth to twin girls in late 2018. So we have living breathing crispr altered humans out there who will probably get married and have kids of their own in about 20 years.

Supposedly, he edited the embryo's DNA to make them less susceptible to HIV. But research in mice...editing the exact same DNA...showed improvements in memory and learning. "So only He knows what he was editing for and why". Some choose to believe the HIV story. I don't.

- Would you CRISPR your spouse? How about your kids? Would you create unique pets like unicorns or pegasus if it was legal and cheap?

Yes I would!

If CRISPR was fully comprehended today would you grow yourself wings? I would. If we could edit our genes to remove one particular disease from the population, which would you choose first? What diseases are okay to edit and what is not okay to edit like ADHD, autism, or shyness?

I know I wouldn't change my Autistic son for the world, Autistic people and Savantism have given us incredible advances and things that we all love. Did you know Albert Einstein and Mozart were likely Autistics with Savantism? Did you know the creator of Pokeman is Autistic? Sometimes these genetic "errors" as we often see them are actually things that help us grow as a species. In fact look up Temple Grandin sometime, she has shown us that even those who once would have been classified "unhelpable" can absolutely change the world because their "defect" helps them see the world in just the way needed to make the changes it needs.

What would you crispr on yourself right now if you could? Tell us your stories. We have Tic Tok and Youtube.

- We are going to take a Commercial break, we will be right back. *(wait 3 seconds)* And we are back.

Commercial spot two: (21:49)

Add "Two Beats"

***** Finish conversation: "Would you"?.**

Would you marry/breed with someone who doesn't know what Genetically Modified Foods are? If they only ate processed or gmo foods would that bother you? Do you wonder how these foods affect your children during conception when life is so fragile? What mutations are being introduced? How is that affecting human hormones and emotions, and does if any of the chemical or hormonal effects affect our romantic relationships?

Would you marry/breed with someone who was altered by crispr when they were an embryo?

My son is 24. I never taught him to ask his dates if they were a test tube baby or if they had gene editing done. I mean who goes on a date and looks at the person across the table wondering if they were genetically altered? Would you ask a date if they had been gene edited in the womb?

A caution to take note is: genes have multiple duties. They dance with each other in an array of combinations creating a plethora of results depending on the circumstances.

Heritable means the gene edits will be passed down generation to generation. We have no idea how these edits will affect humans as they breed, what changes environmental interactions will have on the new genes, and those genes surrounding the edited genes. Would you buy glow-in-the-dark cats, gold seahorses, hairless cats, hornless cattle (injected with a gene from a hornless Angus), silk goats (silk gene from spiders into goats), Frankenswine or Enviropig contains DNA from mice and E-Coli. The E-Coli helps them digest phosphorus better protecting the environment.

Did you know that we have created Sudden-death mosquitos that pass those genes on to their offspring, Human milk is now produced by cows, because of CRISPR and No Brown mushrooms/apples/potatoes?

Would you drink insecticide? Scientists now insert insecticide into agricultural crop DNA, which means you can no longer wash your vegetables clean from insecticide. It is written into the DNA. **It's been** available since 1995. That was 27 years ago, since then, these corn crops dominate what's planted in the U.S

Would you eat vegetables that contained vaccines in their DNA so you didn't have to get your annual flu shot? Should it be normal for our foods to contain vaccines so the nation is safe and we remove human culpability? Crops like this exist. Should we use them?

I have always wondered a little if all these GMO foods we consume are why we are seeing a rise in odd allergies and more and more people with Celiac and other disorders related to the consumption of certain foods.

In 1997 when I first read about GMO's I told the person in the kitchen with me...get me off this planet, we are going to see a shit ton of health problems in the next 20 years. And low and behold we have strange little allergies in every other person.

Would you marry/breed with someone who was a test tube baby?

Louise Joy Brown is 43. She was the first ever Test tube baby born on July 25, 1978, in England

Would you marry someone transable? In the late 1990s, the Scottish surgeon Robert Smith performed elective, above-the-knee amputations on two people. (The hospital he was affiliated with eventually compelled him to stop.) Would you ask a partner to get elective surgery to become disabled so they could be more dependent on you? Do we cripple our partners emotionally anyways when we act neglectful or abusive towards them? What is the difference? Is one more recoverable than the other? Is one more noticeable? [Boxing Helena: movie](#)

Would you marry/breed with someone who was a clone? Would you eat cloned meat? Dolly the sheep, who was born in 1996. That was 25 years ago. FDA concluded meat and milk from clones is safe to eat in 2008. That was 13 years ago. There are no requirements to label **meat** or milk from a **cloned** animal or its offspring, whether **sold** domestically or abroad. Cloned offspring is what is sold in grocery stores. Cows that make pharmaceuticals in their milk are genetically engineered. These genetically engineered animals can be reproduced by cloning.

I guess it doesn't bother some people but it seems a little crazy to me

Yeah, I know most people don't care but I worry about the lack of diversity. I mean if we eat the same cow over and over again for years can that really be what nature intended?

Would you marry/breed with someone who has additional neucliotides? DNA deviations from the typical 4?

We alter ourselves readily. Who doesn't want the perfect nose or breasts? We breed in petri dishes. We eat genetically modified meat and plants. We alter our children before they are able to consent. "Why can't we alter our spouse or create the perfect one from

scratch?” As an adult we don’t have time to grow the perfect mate. It takes us time to even know what we desire in a mate.

Would you clone your child for organs?

At what point is a person more “implant” than human?

Would you marry/breed with someone who was mostly implants?

Will society divide into two incompatible breeding stocks? Those considered “Pure” and those that have been genetically engineered? The average population has no idea how far and fast we have advanced our genetic knowledge. Does eating gmo’s affect us in ways we couldn’t dream?

When does this slope we are headed down become a slippery slope? Millions of genetically altered mosquitoes have been released in Florida. The intent is to eradicate a specific mosquito type. If mosquitoes, then why not rats? If deadly diseases, then why not ADHD? What is currently wrong with you that could/should be fixed? It’s not just the accuracy, speed, and ease that sets CRISPR apart, it is the fact that it is able to work inside any living cell.

2018, the Secretary of Agriculture announced that the USDA would not regulate genome editing products from crispr. This is another reason why researchers and companies prefer using CRISPR in agriculture whenever it is possible. Our own government doesn’t care what we do to our food “using crispr” even if we go bat shit crazy on it.

The USDA approves crops developed with CRISPR for commercial growth without regulation. A few examples on the market are: Disease- and drought-resistant corn, canola oil with increased nutritional value, herbicide-resistant soybeans, potatoes more resistant to cold storage, gluten-free wheat. And these all sound great! But, if the USDA does not class these as GMOs, then they (and any processed products containing them) do not need to be labelled as such.

Bacteria are famous for their ability to sponge up DNA from their surroundings and they exchange genes with other bacteria including organisms from different kingdoms of life, such as plants. A wonderful example of this comes from Japan, at one point the population was eating seaweed but unable to digest it properly, however through the evolution of their gut bacteria they stole DNA from Ocean bacteria and became able to properly digest seaweed. What will bacteria do with all the gene editing we put out into

the world? What about summer camps offering crispr editing at the playground? Are these kids properly disposing of the gene edits or is it spilling onto the ground and seeping into the world evolving in ways we won't understand?

If handled properly, DNA alterations can be a positive and crucial component in the future of humanity. Governments, scientists, and the general population need to work together to keep technology from being misused. Curiosity alone is not good enough reason to apply gene editing. In Europe, the labelling of GMO foods is legally mandated. The current rules came into force in 2004. Unlike in America, where the genetic material of organisms determines their status, in Europe a GMO is any organism that has been created using GM technology. Food has to be labelled as GM if any of the ingredients come from a GMO, even if no GM material is present in the final product, as is the case with flour or oils.

If gene editing was socially acceptable I would design a purple baby with wings. This is not a good thing. The deepest we should be able to embarrass our children preconception, is by giving them unfortunate names.

And further more not only should we not be able to create strange little hybrid babies, our mates should have autonomy. We need to be content with our right to walk away from a bad relationship.

No matter how desperate we are to be in a relationship?.

Yes Raychel. Be brave enough to walk away. Given the global diversity out there, you CAN find better, even if that means changing yourself before you start looking again.

Share Audience stories/ideas

I would like to introduce next week's episode. Absorbed In Our Partners: exposure occurs by one of three exposure routes: inhalation, ingestion, dermal. Both Topical and transdermal chemicals are applied to the skin, only transdermal formulas penetrate the skin and affect deeper distant tissues. ... Is a man meant to be Topical or Transdermal therapy?

Given that Topical compounds only minimally penetrate the skin layer...and we know the chemicals our partners exchange with us cause epigenetic changes throughout our bodies...I would say our partners are transdermal compounds we absorb. What are you absorbing from your partner? How can you ensure it is therapeutic and not toxic? Would your body give you physical, emotional, or spiritual signals to warn you?

We want you guys to submit your ideas/stories/and questions pertaining to next week's topic. You can email us. Or, join our patreon. We want to hear from you. And if you got anything out of today's episode give us some love, subscribe, and rate us.

Thank you so much everyone for listening. We love you. See you next week on Dating Hypothesis!!!

Music ends show