

Are We Programmed or Do We Have Free Will?

Discussion on Fate and Genetic Determinism



Seminar flow

ACTIVITY	TIME
Introduction	9.00 – 9.10 (10 mins)
Part 1: Islamic View on Free Will & Determinism	9.10 – 9.55 (45 mins)
Stretch break	9.55 – 10.00 (5 mins)
Part 2: What Does Science Tell Us About Free Will & Determinism	10.00 – 10.50 (50 mins)
Group Exercise: Life Game	10.50 – 11.50 (1 hour)
Q&A	10.50 – 12.00 (10 mins)



Instructors



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Our life journey



LEARNING OUTCOMES

1. Describe the Islamic view on determinism and free will.
2. Explain the basic dimensions of human life.
3. Identify the meaning of Man's accountability (*mukallaf*) .
4. Describe gene interactions with human behavior.
5. Describe the types of genetic determinism and their relation to human behavior



Preliminary questions?

1. What does freewill and determined mean?
2. Can we understand *qaḍā'* and *qadar*?
3. Is it true the entire human life and behavior are determined?
4. What is the role the Prophethood in human behavior?
5. Are Muslim theologian holding the same opinion about human free will?
6. What is the scientific perspective on genetic determinism?



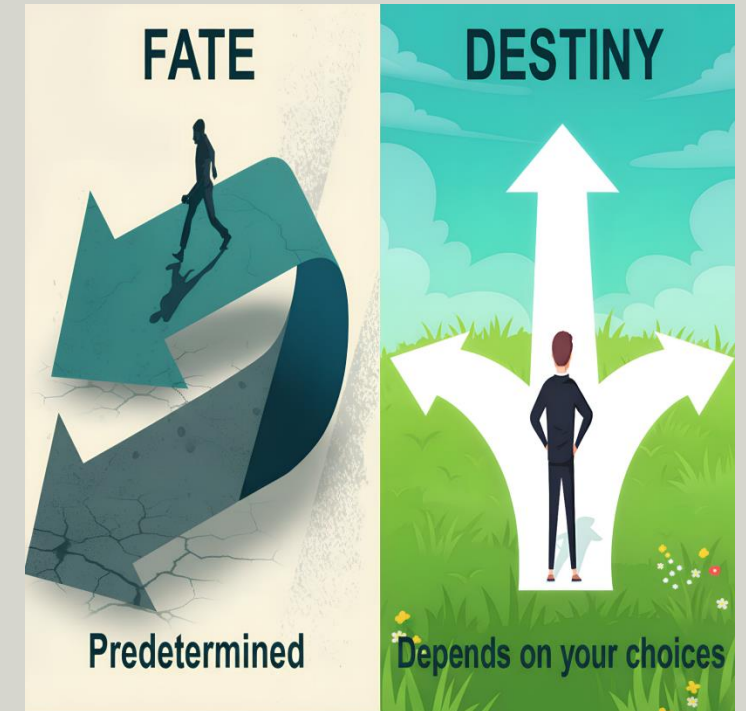
Free Will

- The ability to freely and consciously make choices that are not externally determined.
- The capacity of human beings to choose a course of action from among various alternative.
- It also means: “*voluntary choice or decision*”



Determinism

- It implies “*ordained in advance*”.
- It is the belief that all events, including human actions, are ultimately determined by causes regarded as external to the will.
- This imply that individual human beings have no free will and cannot be held morally responsible for their actions.



Examples

Looking into human life, one observes that every person can:

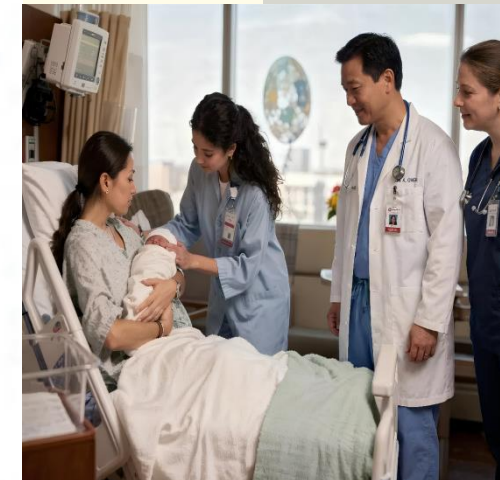
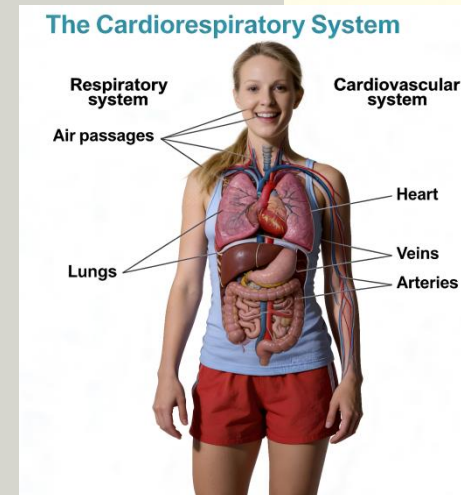
- Drive a car
- Choose to eat this food or that drinks
- Choose his or her spouse
- Act with kindness towards others
- Help someone in need
- Work and achieve certain goals in life
- Improve certain conditions of life



Pre-Determined Aspects of Life

We can also see that certain aspects in life are pre-determined:

- Place of birth
- Race/Ethnicity
- Date of birth
- Sex
- The functions of body systems
 - ✓ Respiratory system
 - ✓ Immune system
 - ✓ Cardiovascular system
 - ✓ Urinary system
 - etc.



Wait A Minute!

Very interesting, right? It means that:

- There is an area of human life that we can make choices, i.e., *free will*.
- There are aspects in our life that have been pre-determined.
- Now:

Let us put that into perspective.



Human Nature!?

The physiological and psychological characteristics shared by all humans.

There are three dimensions that form human nature/life;

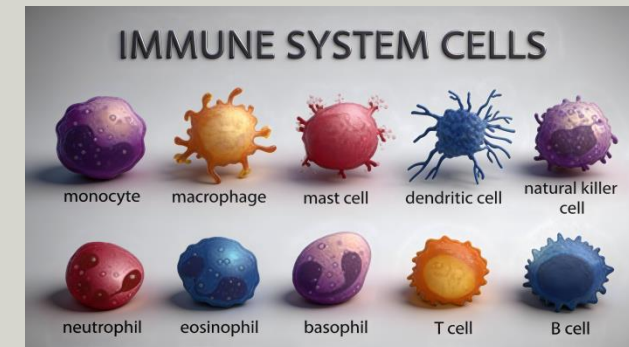
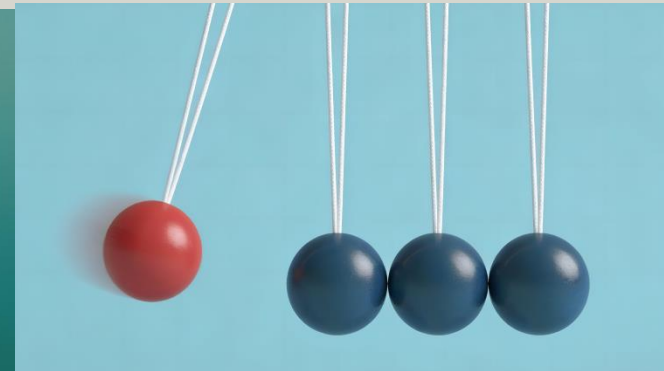
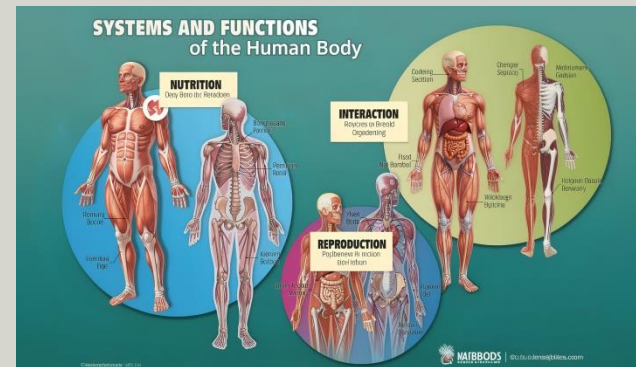
- a) Laws of physical world (body)
- b) Natural instincts
- c) Optional choices



Laws of the Physical World

Examples:

1. Laws of motion
2. Gravitation force
3. Laws of reproduction
4. Functions of the human anatomy



In this dimension:

- Man's life functions according to laws of nature.
- Mankind is programmed and determined
- Man and woman have no free choice.
- Man is therefore not accountable for the events and incidents of this area of life.

1. Chapter 54, verse 49
2. Chapter 25, verse 2
3. Chapter 3, verse 6
4. Chapter 42, verse 49



Natural instincts

الغرائز الطبيعية

Inborn desires of the human psyche, or the ways of behaving: feelings that are not learned but inborn and common to all.

Examples:

- a) Creativity
- b) Reflection
- c) Activity
- d) Sexuality
- e) Hunger
- f) Ownership



Innate Instincts

Innate instincts are inborn, not acquired, hence:

- a) The fulfillment of these innate instincts are acquired
- b) Man is not accountable for having such instincts, i.e. *these instincts are gifted*.
- c) Man has the choice to guide his/her desires to the right way.
- d) Man is accountable for directing the fulfilment of his/her inborn desires
 - (Q.7: 30)
 - (Q.17:32)
 - (Q.3:134)



Optional choices الخيارات المكتسبة

This means:

- a) Left to one's choice: the ability to make a choice from given options.
 - b) It is the quest for the best of given options, with the will and ability to do the matter.
 - c) Accountable for making given choices - reward and punishment follow accordingly.
- (Q.76:3)
 - (Q.90:10)
 - (Q.74:38)



Mukallaf (Responsible)

- A mature and mentally sound person who can make a choice between given options:
 - a) right or wrong
 - b) good or bad
 - Accountable for the consequences of his/her actions.
- (Q.91:8)



Accountability

- Man is accountable only for what he is capable for and able to do; physically and mentally.
 - The presence of the faculty of the mind makes the person accountable for their choices (*mukallaf*).
 - Options and actions are by God, yet human beings has the ability of acquisition (*kasb*).
 - Without the ability, due to mental immaturity (child, insane), sleep, etc → absence of *taklīf*.
- (Q.2:286)
- Based on the well-known Prophetic narration- three types of people are not accountable for their deeds; “*insane, the child and sleeping person*”.



What is the role of guidance (*hidāya*)?

This means:

- a) An advice or an information provided to someone to do right or choose the best option.
- b) Prophethood and Revelation are given to us, to aid the mind to choose the best of available options in life.

➤ (Q.7:68 and 79)



Two Types of Divine Guidance

a) Guidance in the sense of showing the good way (hidāya al-dilāla)

➤ (Q.41:17)

b) Guidance in the sense of actual support to achieve the goals (hidāya al-tamkīn)

➤ (Q.28:56)

➤ (Q.24:46)



qaḍā' and *qadar*

- a) *qaḍā'* refers the knowledge of God, whose knowledge covers the past, present and future.
- b) The events and conditions of the entire universe are covered by His eternal knowledge before things and event take place.
- c) The divine measurement or *qadar* reflects another level of divine destiny, which allows particular events and conditions to happen at a specific time and place.
- d) *qaḍā'* means God's knowledge of all the events in life, while *qadar* refers to bringing events according to his knowledge in its specific condition, time and place.



Four (4) Pillars of the Divine Decree

God is All-knowing, and nothing falls beyond His knowledge

God has written down part of His eternal knowledge (recorded), which covers everything

God's will is all-encompassing; there is nothing that falls outside His will.

Allah (s. w. t.) is the True Creator, Who created everything and everyone



Readings for the Four Pillars of Divine Decree: Part I

There are four pillars of the belief in the divine decree

a) The Divine Knowledge; God is All-knowing, and nothing falls beyond His knowledge.

➤ (Q.29:42)

➤ (Q.22:70)

➤ (Q.72:28)

b) God has written down part of His eternal knowledge in recorded, which covers everything regardless of how big or small the thing or event might be.

➤ (Q.6:59)

➤ (Q.57:22)



Readings for the Four Pillars of Divine Decree: Part II

c) The Divine Will - God's Will is All-encompassing; there is nothing that falls outside His Will. Whatever He wills happens, and whatever He does not will does not happen.

➤ (Q.36:82)

➤ (Q.76:30)

d) Allah (swt) is the True Creator, Who created everything and everyone, including human actions and handiworks.

➤ (Q.40:62)

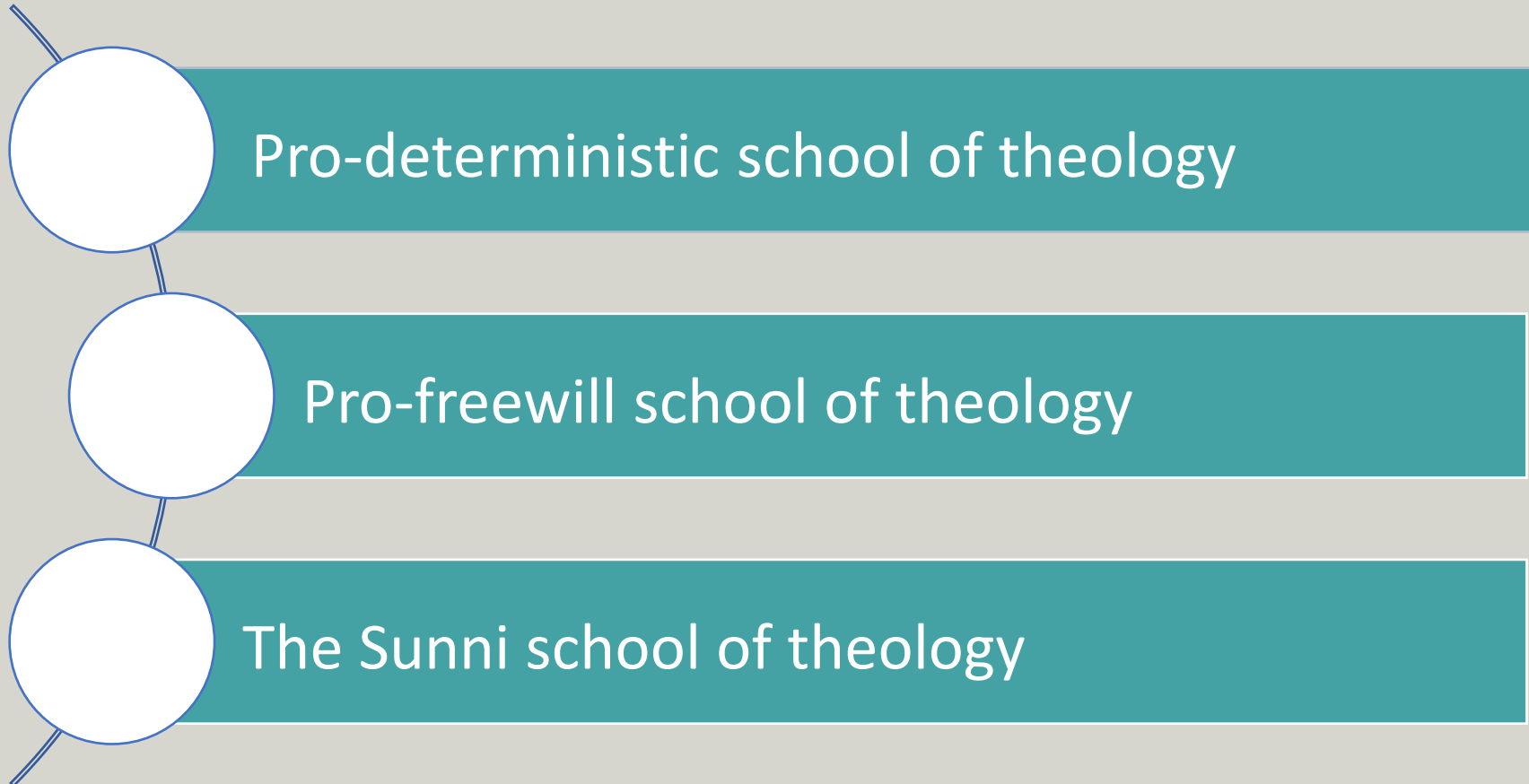
➤ (Q.25:2)

➤ (Q.35:3)



Are we Free or Programmed?

Summary of Responses from Muslim schools of theology



SUMMARY

- Humans have the ability to choose within the power of Allah.
- We are held accountable only in matters in which we have free choice.

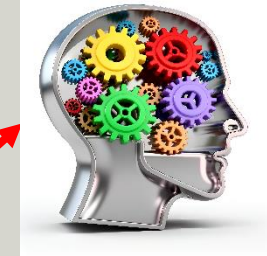
What Does Science Tells Us About Free-will And Determinism?

- Are we genetically determined?
- Is the claim that we are genetically determined scientifically certain?

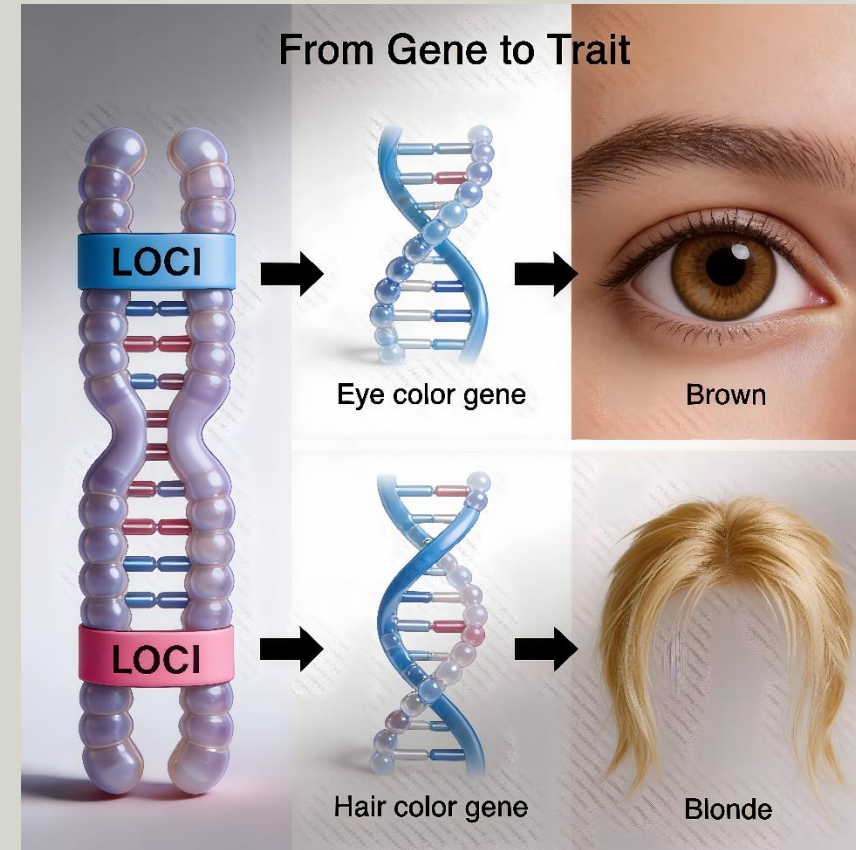
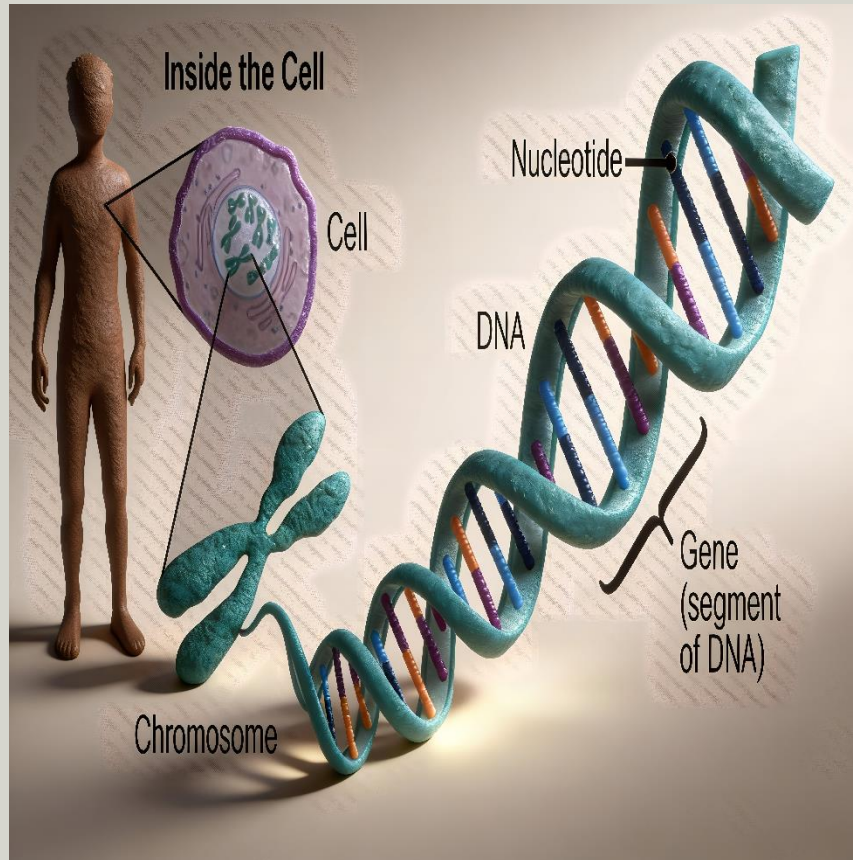


What is Genetic Determinism?

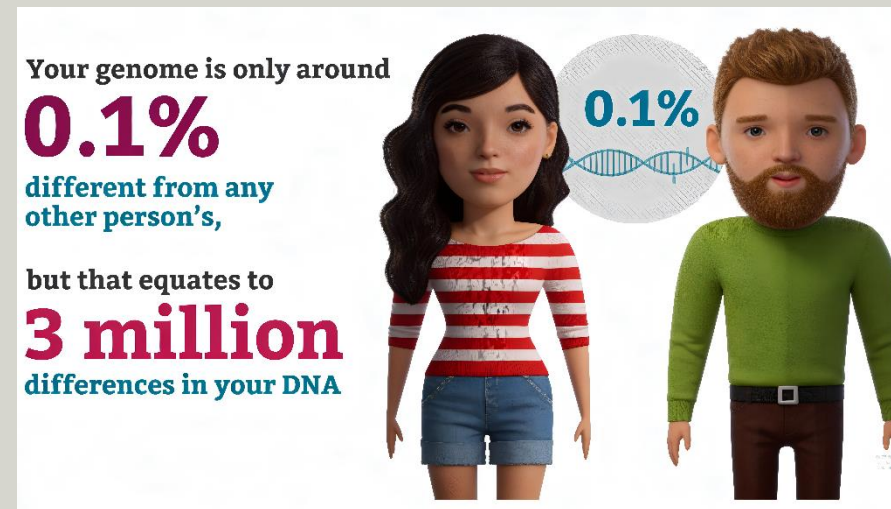
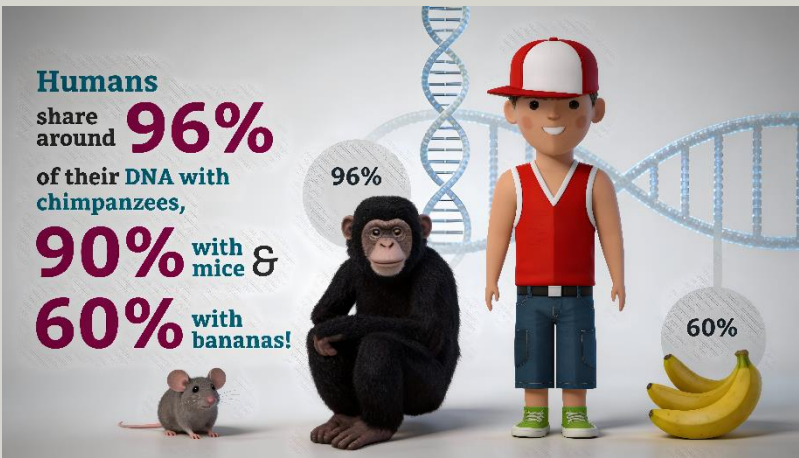
Attributing to genes the formation of human traits at an individual level, perceiving them as having more causal power.



What is a Gene?

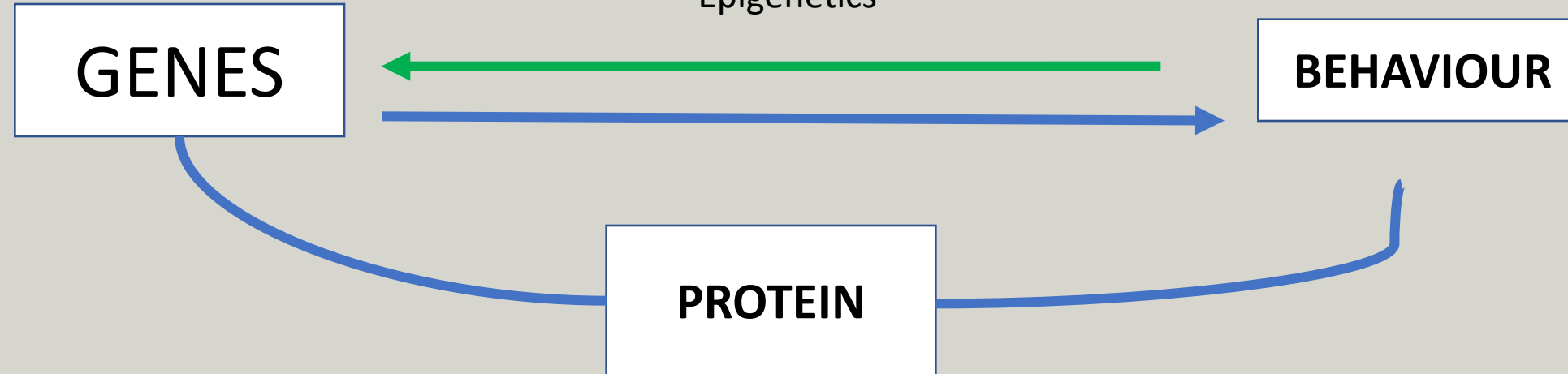


Interesting Facts about Genes



Genetic Link to Behavior: Association versus Causal

ENVIRONMENT

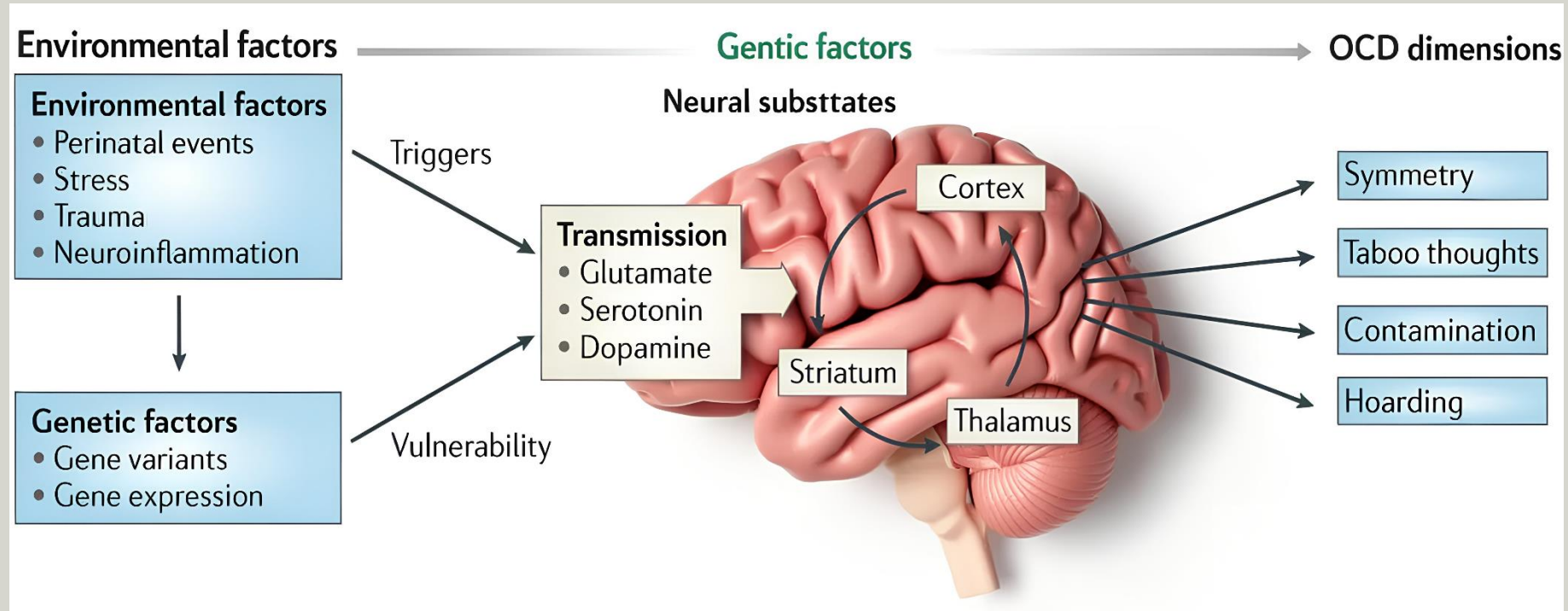


ONE-to-ONE	one gene associated with one trait
ONE-to-MANY	one gene associated with several traits
MANY-to-ONE	several genes associated with one trait
MANY-to-MANY	many genes associated with many traits
MULTIFACTORIAL	many genes interacting with environmental factors

STRONG DETERMINISM > 95%
MODERATE DETERMINISM > 50%
WEAK DETERMINISM < 50%



Genes and OCD



OCD is familial. Only three genome-wide linkage studies have been completed to date, with suggestive but not definitive results. In addition, **over 80 candidate gene studies have been published**. Most of these studies have focused on genes in the serotonergic and dopaminergic pathways. Unfortunately, none have achieved genome-wide significance, and, with the exception of the glutamate transporter gene, none have been replicated.

Pauls, D.L. The Genetics of Obsessive-Compulsive Disorder: A Review. Dialogues in Clinical Neuroscience 12, no. 2 (2010): 149–163, <https://doi.org/10.31887/DCNS.2010.12.2/dpauls>.



Our Behavior Can Disrupt Our Gene



Paper link: <https://theconversation.com/extreme-stress-in-childhood-is-toxic-to-your-dna-99009>



Genetics Study On Behavior

- Laura B. Koenig, Matt McGue, Robert F. Krueger, and Thomas J. Bouchard Jr., Genetic and Environmental Influences on Religiousness, *Journal of Personality* 73, no. 2 (2005): 471–488, <https://doi.org/10.1111/j.1467-6494.2005.00316.x>.

- Richard P. Ebstein, Mikhail V. Monakhov, Yunfeng Lu, et al. Association between Dopamine D4 Receptor Gene Exon III Variable Number of Tandem Repeats and Political Attitudes in Female Han Chinese Free, *Proceedings of the Royal Society B* 282, no. 1813 (2015): 20151360, <https://doi.org/10.1098/rspb.2015.1360>.

- E. Krapohl and R. Plomin, Genetic Link between Family Socioeconomic Status and Children's Educational Achievement Estimated from Genome-Wide SNPs. *Molecular Psychiatry* 21 (2016): 437–443, <https://doi.org/10.1038/mp.2015.2>.

Genetic and environmental influences on religiousness: Findings for retrospective and current religiousness ratings

Laura B. Koenig, Matt McGue, Robert Krueger, Thomas J. Bouchard

Research article

Association between the dopamine D4 receptor gene exon III variable number of tandem repeats and political attitudes in female Han Chinese

Richard P. Ebstein , Mikhail V. Monakhov, Yunfeng Lu, Yushi Jiang, Poh San Lai and Soo Hong Chew

Published: 22 August 2015 | <https://doi.org/10.1098/rspb.2015.1360>

Genetic link between family socioeconomic status and children's educational achievement estimated from genome-wide SNPs

E Krapohl  & R Plomin

Molecular Psychiatry 21, 437–443 (2016) | [Cite this article](#)

Case Studies

Food Cravings

Your genotype for Food Cravings shows you are susceptible to

Some Food Cravings

You may feel satiety (the feeling of being full after a meal) but don't always recognize the feeling right away. You may indulge in food cravings and snacking quite often, and thus be at risk for obesity. We recommend you drink a glass of water whenever you feel like eating between meals, so you can assess if it's real hunger or not.

How Did You Get This Result?

Polymorphisms (variations) in the FTO (fat mass and obesity-associated) gene code for the way your body stores fat. The main SNPs marker for stored fat in this gene is **rs9939609**. It is located on Chromosome 16.

Your genotype for the **RS9939609** marker is **AT**

Your genotype for the **RS1421085** marker is **TC**



What Is The Difference Between "High Food Cravings" And "Low Food Cravings"?

High Food Cravings is a dominant trait. That means that you only need one of your parents to give you the "High Food Cravings" gene to experience regular food cravings. You may not feel satiety at the end of your meal and have a tendency to eat more and more often.

Snapshot Prediction Results Composite Profile



Snapshot #3999837068

PNL Document #15E06M49-R01C01



Arrest Photo

Predicted (■) & Excluded (☒) Phenotypes

Skin Color 8.9
Fair / Very Fair (96.5% confidence)
NOT Lt Olive / Dk Olive / Dark (96.5% confidence)

Eye Color 82.2
Brown / Hazel (93.8% confidence)
NOT Black / Blue / Green (93.8% confidence)

Hair Color 66.8
Brown / Black (98.7% confidence)
NOT Red / Blond (98.7% confidence)

Freckles 39.5
Few / Zero (71.9% confidence)
NOT Many (91.7% confidence)

Sex: Male ♂

Age: Unknown
(Composite shown at age 25)

Body Mass: Unknown
(Composite shown at BMI 22, Normal)

Ancestry: Latino / European



What is Epigenetics?

Watch Video:

What is epigenetics? - Carlos Guerrero-Bosagna

TED-Ed

[https://www.youtube.com/watch?v= aAhcNjmvhc](https://www.youtube.com/watch?v=aAhcNjmvhc)



Types of Genetic Determinism

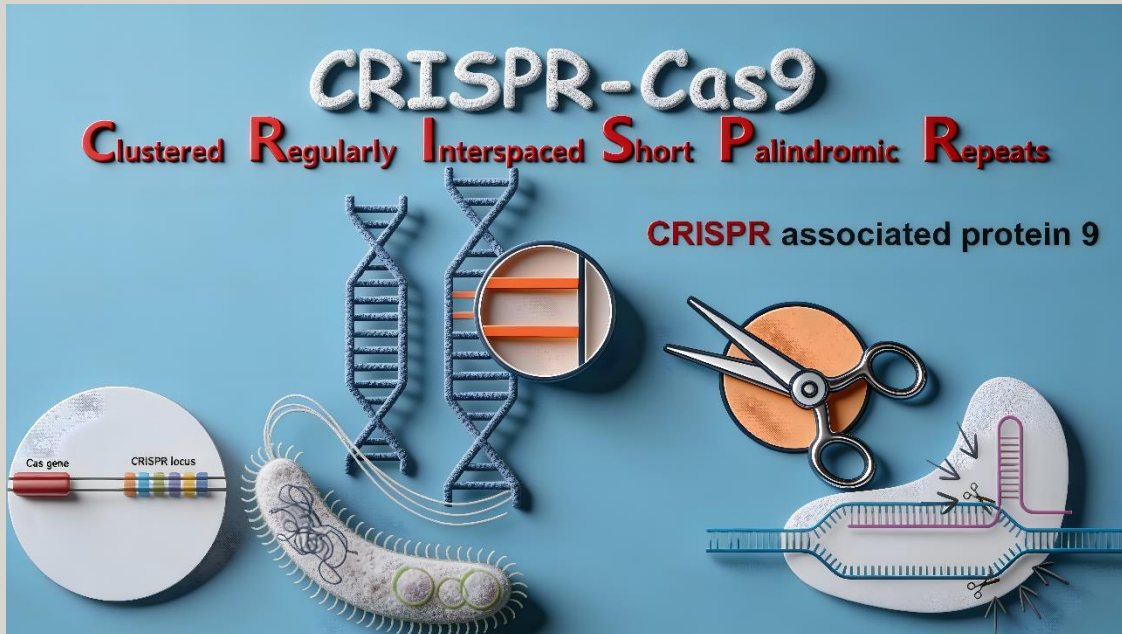
PARTIAL DETERMINISM

-genetic & environment

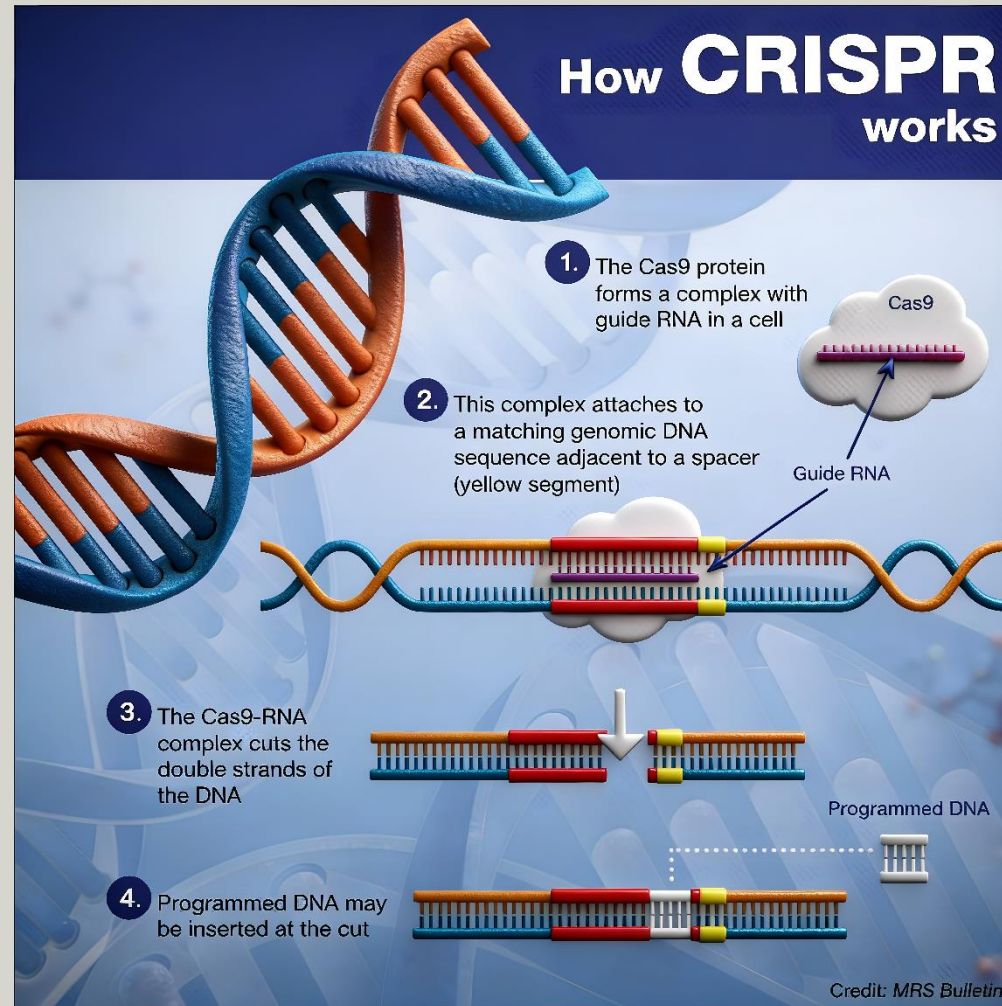
FULL DETERMINISM

- Only genetic play role

FATALISM/ESSENTIALISM



How CRISPR Works



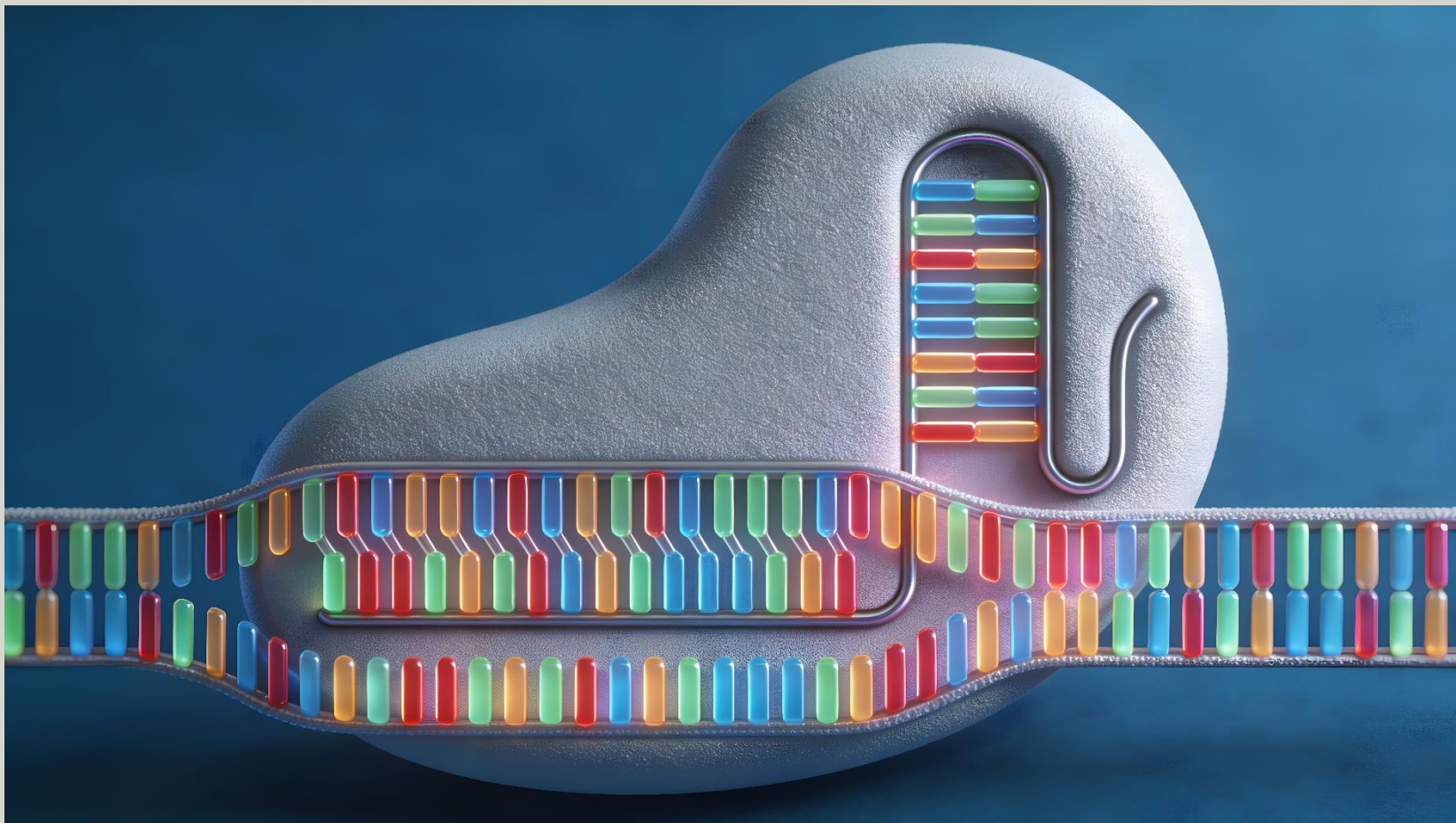
CHISPR Explained

**Watch Video:
CRISPR Explained**

Mayo Clinic

<https://www.youtube.com/watch?v=UKbrwPL3wXE>





Anecdote 1

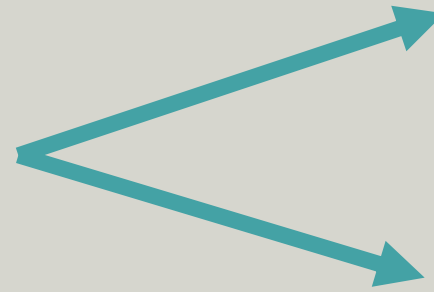
Mr. A told the judge, "your honor, my genes made me do the crime"



Genes and Criminal Behavior

MECHANISM

altered monoamine oxidase
enzyme -> high serotonin >
aggression



Evidence is weak

Association but not causal

Genes, Free Will, and Criminal Responsibility by Joseph S. Alper, Department of Chemistry and Center for Genetics and Public Policy, University of Massachusetts–Boston, Boston MA 02125, USA.



Anecdote 2

During a public debate, Mr. K argues:
“Same-sex attraction is predisposed in my genes”.



Same-Sex Attraction

STUDY FINDINGS

- No one specific gene associated with same-sex sexual behavior
- Five genetic markers associated with same-sex sexual behavior

NEW STUDY CONCLUDES THERE IS NO SINGLE "GAY GENE"

RESEARCH SHOWS SEXUAL ORIENTATION IS SHAPED BY A MIX OF GENETICS AND ENVIRONMENTAL FACTORS



©CBS NEWS

IS THERE A "GAY GENE"? MAJOR NEW STUDY SAYS NO

"Overall, genetics account for between 8% and 25% of a person's same-sex attraction..."

NEW STUDY CONCLUDES THERE IS NO SINGLE "GAY GENE"

RESEARCH SHOWS SEXUAL ORIENTATION IS SHAPED BY A MIX OF GENETICS AND ENVIRONMENTAL FACTORS



Summary from a Scientific View

- We can categorize genetic determinism it into full determinism & partial determinism.
- The interactions between genes & behaviour are complex, multifactorial and we do have the ability to edit genes.
- With regards to crime and same-sex attraction, the evidence of genetic determinism is not conclusive and uncertain.
- Scientists differ whether our actions are deterministic, or do we have free will due to the elements of uncertainty about the laws of nature.



Class Activity Time!

