



MUTANTS IN SCIENCE FICTION

ISF UNIT 03

What is Mutation?

- Change in DNA sequence: New organism or new genetic character arising from alteration of DNA
- Natural occurrence of genetic mutation is integral to evolution: Can be neutral, beneficial, or harmful
- Examples in real life:
 - Genetic disorders (e. g. sickle cell anaemia)
 - Beneficial mutations (e. g. antibiotic resistance in bacteria)
 - Evolutionary changes (e. g. melanism in moths)
- Most mutagens (physical/ chemical agent that induces mutation) are carcinogenic

From Genetics to Fiction

- Common trope in SF
- SF often extrapolates real genetic mutations
- Not all mutations have noticeable phenotypic effects in real life, but new phenotypes seen in fictional mutations go far beyond biologically natural mutants
- Fictional mutants exhibit exaggerated or superhuman abilities and qualities e. g. X-Men, The Hulk, Godzilla



Genetics as a discipline began in 19th century

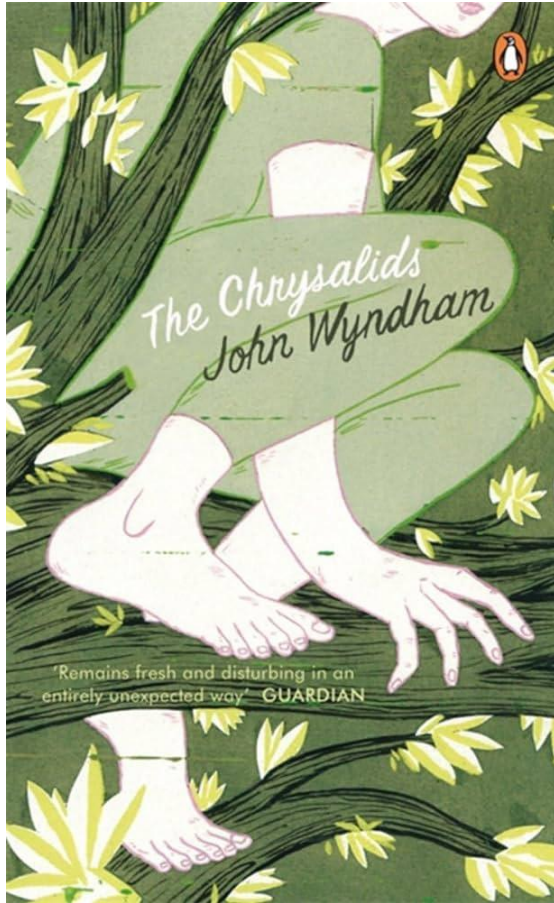
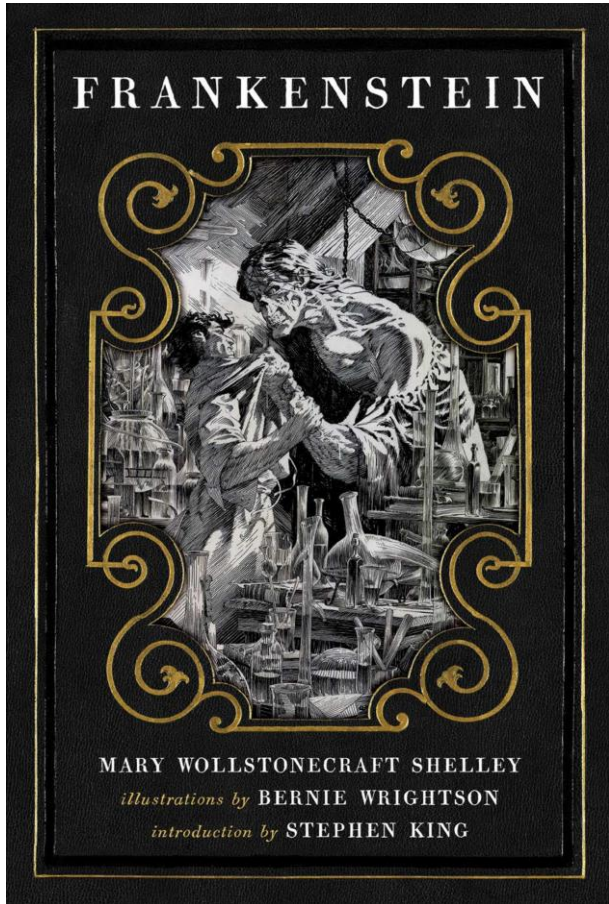
Gregor Mendel (three principles of inheritance, 1863), Francis Galton (Eugenics, 1883)

Molecular Biology began with identification of DNA as main genetic material in 1944, and discovery of double helix structure in 1953

DNA Sequencing came in 1977

First cloning became possible in 1996

BOOK COVERS



Early Mutant Stories (19th - Early 20th Century)

- Mary Shelley's *Frankenstein* (1818): Artificial life and unintended consequences
- H.G. Wells's *The Island of Doctor Moreau* (1896): Genetic manipulation and ethical dilemmas

Atomic Age & Radioactive Mutants (1940s-1950s)

- Mutants as response to fear of nuclear disaster
- Mutants as reaction to effect of nuclear devastation
- *Godzilla* (1954): Known radiation-induced mutation
- *The Incredible Shrinking Man* (1957): Exposure to unknown radiation

X-Men & Genetic Superpowers (1960s-1970s)

- X-Men (1963, Marvel Comics): Mutants as metaphor for civil rights struggles
- Gamma radiation and The Hulk (1962): Mutation as transformation
- Up to this era, genetic changes shown as result of radiation/ eugenics or breeding programmes/ chemical manipulation/ surgery (totally fictional)

Biotech & Genetic Engineering Mutants (1980s-1990s)

- *Jurassic Park* (1990): Cloning and genetic modification after recovery of complete genome of a dinosaur from fossil
- *Teenage Mutant Ninja Turtles* (1984): Mutation as origin story
- After 1970s, genetic changes were shown as mostly result of genetic engineering

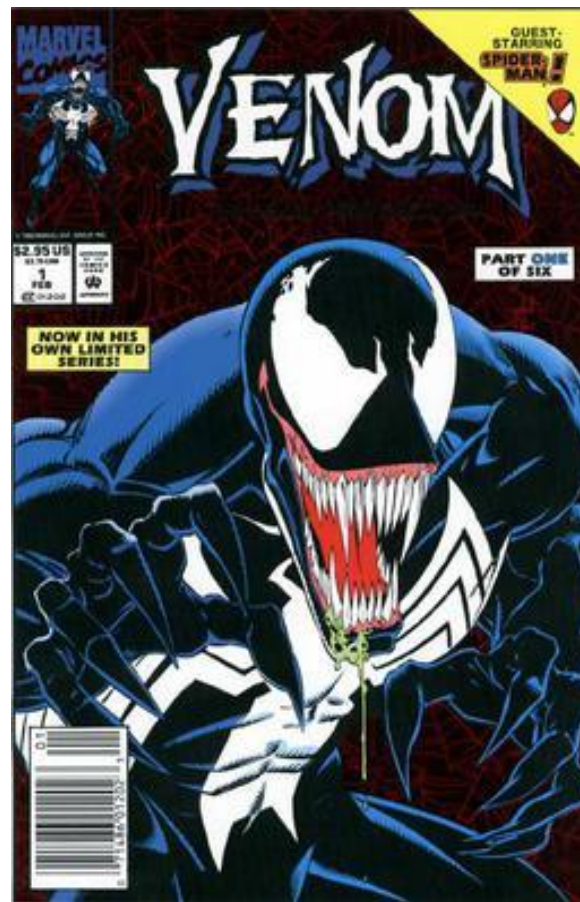
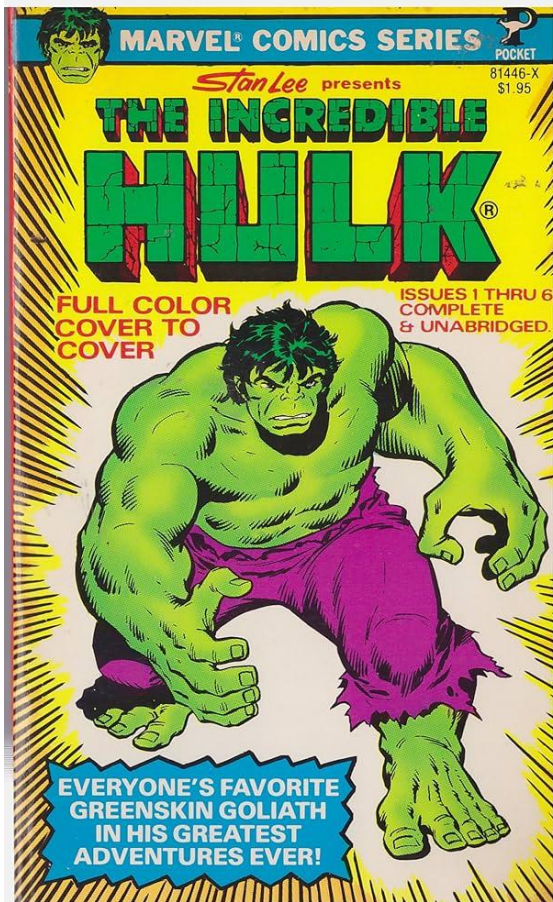
Modern CRISPR & DNA Editing (2000s-Present)

- *Gattaca* (1997): Genetic determinism (legacy of eugenics)
- *Orphan Black* (2013–2017): Cloning and genetic engineering ethics
- *The Boys* (2019–): Corporatized genetic enhancement

“

**TYPES
OF
MUTANTS
(which one are you?)**

BOOK COVERS



Evolutionary Mutants

- X-Men, where mutation represents natural human evolution, and are called *Homo superior*, next stage of *Homo sapiens*
- Abilities include telepathy, telekinesis, super healing, super strength, energy beam emission, flight, time travel etc.
- These have been imagined as supernatural abilities in other kinds of literature like fantasy, mythology
- Significance: Metaphor for progress and fear of change

Accidental Mutants

- Frankenstein's Creature (unexplained scientific experiment), The Hulk (radiation), Spider-Man (genetically modified spider bite)
- Unexpected, uncontrolled, and sometimes disastrous result of experiment or alteration
- Significance: Fear of scientific accidents and ethical dilemmas, anxiety of 'playing god'

Engineered Mutants

- Dr. Moreau's human-animal hybrids, Captain America (Super Soldier Serum), Wolverine (Weapon X Program)
- Planned genetic alteration: Feasible? Desirable?
- Significance: Ethical debates on genetic enhancement
- Potential but also warning: Humanity can create its own monsters and be destroyed by them

Post-Apocalyptic Mutants

- Example: *Fallout* series, *The Omega Man*, *Mad Max: Fury Road*
- Significance: Fear of environmental disaster and its genetic consequences
- *The Chrysalids* (1955) by John Wyndham: post-apocalyptic, fundamentalist society, mutation as result of radiation, mutation considered deviation, deviants are killed

Alien & Non-Human Mutants

- Example: *Venom* (2018), *The Thing* (1982), *The Fly* (1986)
- Significance: Xenophobia and the 'other'
- Question of persecution: mutants as minority
- Minority fear and hatred: represents variety of marginalized groups (religious, sexual, ethnic, and any other minority)

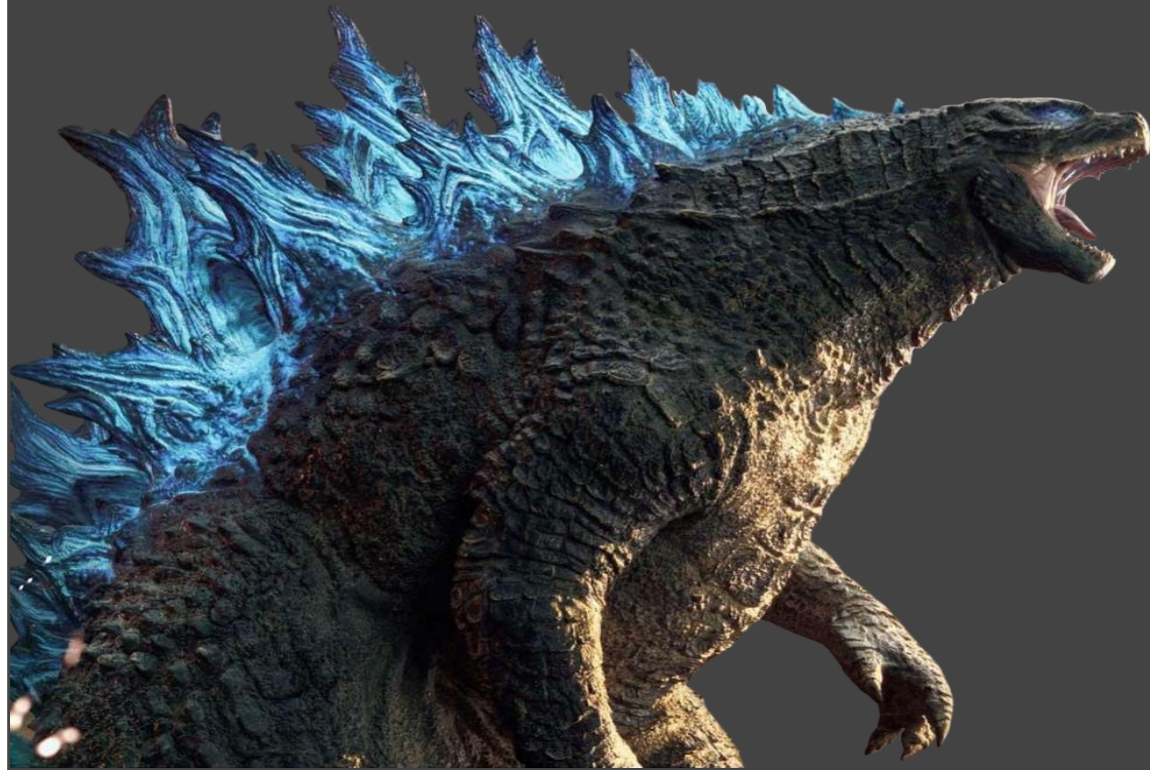


Mutants as Threat & Protection

- Fear of unknown: Mutants are often shown as villains
e. g. Magneto (X-Men), The Creature (*Frankenstein*)
- Sometimes, mutants become protectors: TMNT, X-Men fighting discrimination
- Mutants as message to audience: Representation and awareness of minority groups

Mutants in Popular Culture

- Continued fascination with superpowers and mutations: Balance between fear and admiration of genetic change
- Ethics of Genetic Manipulation: Should humans control evolution? What about CRISPR and designer babies?
- Future of Mutation in SF: Will sci-fi mutants evolve alongside real genetic advancements? Speculation on new themes (AI-hybrid mutations, biotech warfare)



**THANK
YOU!**