

THE CONNECTION OF EUGENICS AND STATISTICS

A DISABILITY ADVENTURE

AUTHOR'S NOTE:

THIS COMIC WAS BOTH REWARDING AND CHALLENGING TO CREATE. I WILL USE STATISTICS A LOT IN THE FUTURE, SO IT WAS CHALLENGING TO LEARN THAT THEY WERE INITIALLY NOT COMPATIBLE WITH MY IDENTITY AS A DISABLED PERSON. UNFORTUNATELY, THE HISTORY OF STATISTICS INCLUDES ABLEISM, RACISM, SEXISM, STATE-SANCTIONED MURDER, AND MEDICAL REFERENCES, SO BE FOREWARNED. SADLY, I HAD NO IDEA WHAT STATISTICS WAS INITIALLY USED FOR, EVEN THOUGH I HAD TAKEN AP STATISTICS IN HIGH SCHOOL. FROM TALKING TO VARIOUS PEOPLE AT HAVERFORD, THE STORY IS NOT REQUIRED MATERIAL IN THE MATH DEPARTMENT. IF WE ARE GOING TO CREATE A GENERATION OF UPSTANDING MATHEMATICIANS, STATISTICIANS, AND SCIENTISTS, WE MUST CONFRONT THE HISTORY AND MISUSE OF SCIENTIFIC TOOLS. STATISTICS IS SOMETHING THAT EVERYONE ENCOUNTERS, EVEN IF WE DON'T ACKNOWLEDGE IT. WE SEE GRAPHS IN THE NEWS, FIND "INTERESTING FACTS" ON SOCIAL MEDIA, AND QUOTE STUDIES IN CONVERSATION WITHOUT FACT-CHECKING THEM FIRST. ANYONE COULD BE SUCKED IN BY FALSE INFORMATION OR ACCIDENTALLY SPREAD SOMEONE ELSE'S PLAN. THIS STORY NEEDS TO BE TOLD FOR EVERYONE'S SAKE, SO WE SEE THE TRUTH FOR WHAT IT IS AND NOT REPEAT HISTORY.

HEY, OVER HERE!

I'M SPOT. IT'S NICE TO MEET YOU! I AM DAMAGED BRAIN MATTER.

I HEARD YOU WANTED TO LEARN SOMETHING ABOUT STATISTICS.

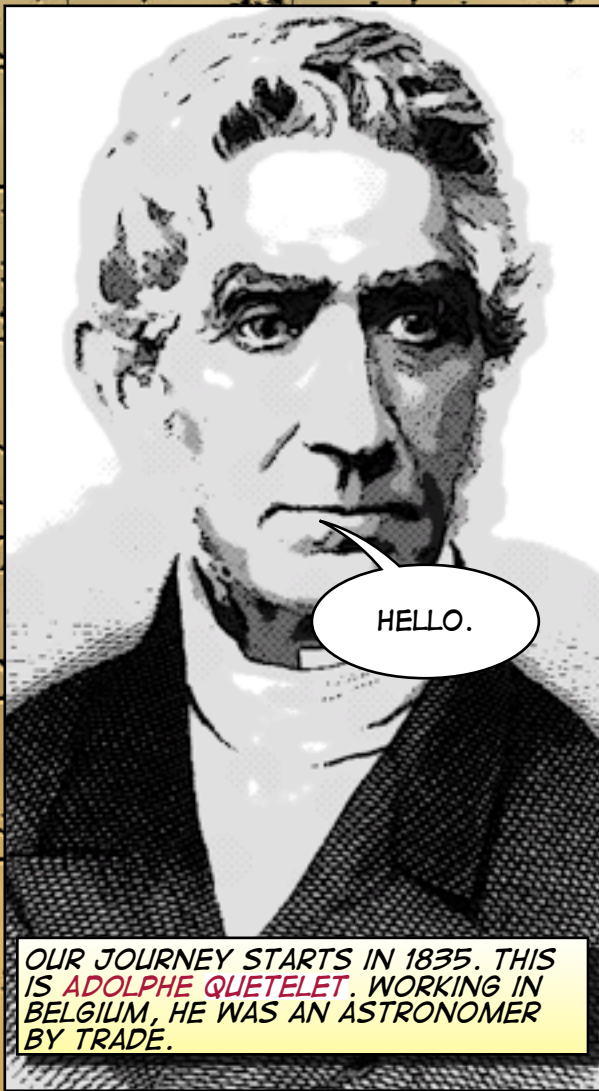
WELL DID YOU KNOW ABOUT ITS DARK ORIGINS?

A GHOST STORY?

THE TRUTH IS MORE HORRIFYING THAN ANY STORY.

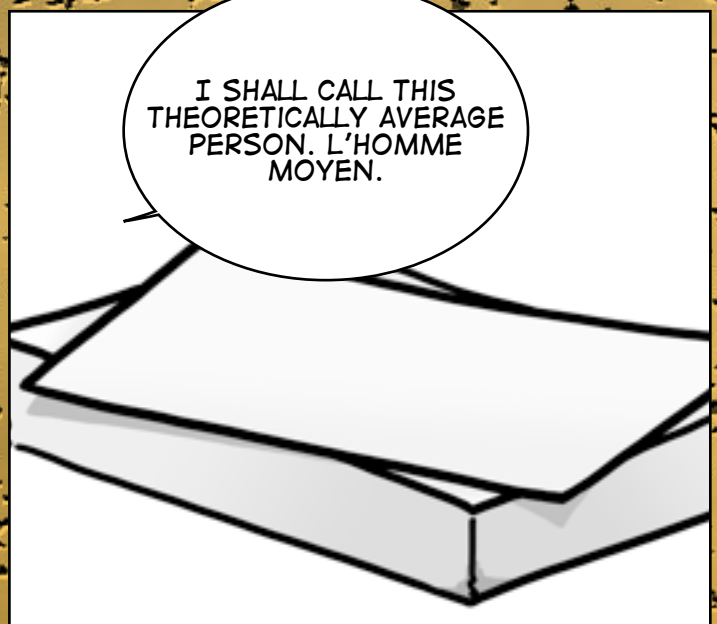
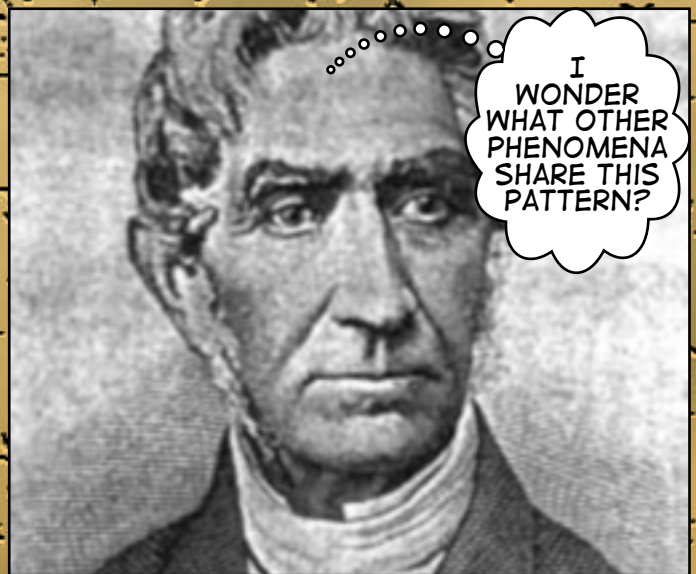
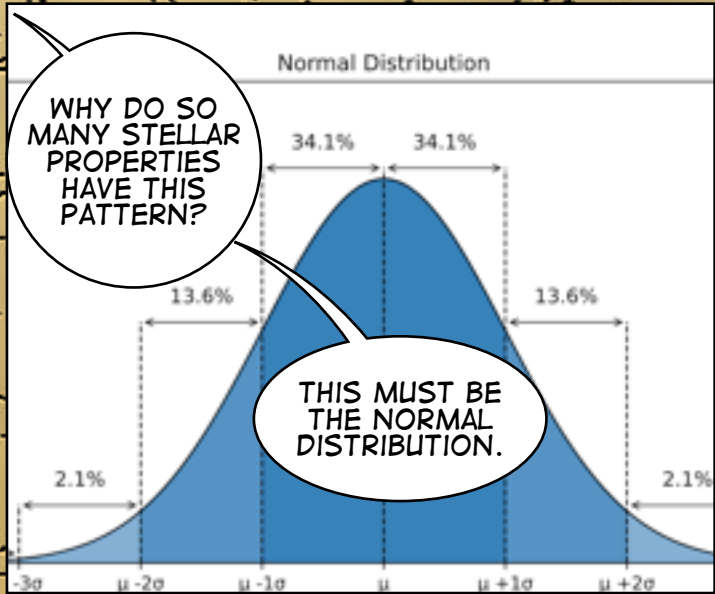
LET ME SHOW YOU.

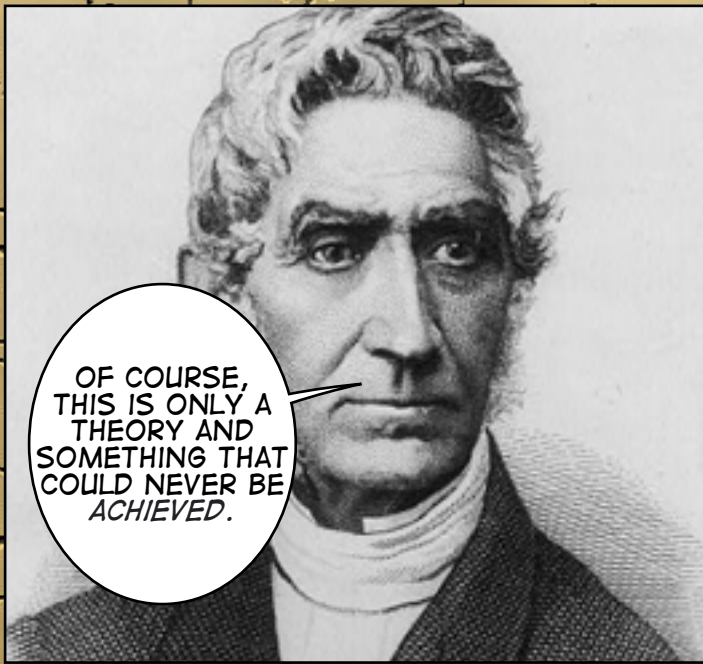
ONE TIME TRAVEL EVENT LATER...



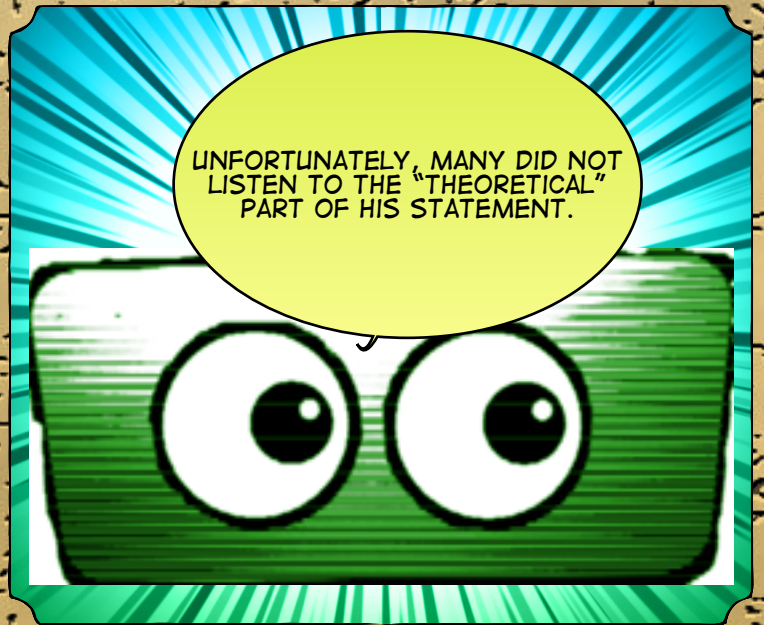
HELLO.

OUR JOURNEY STARTS IN 1835. THIS IS **ADOLPHE QUETELET**. WORKING IN BELGIUM, HE WAS AN ASTRONOMER BY TRADE.





OF COURSE, THIS IS ONLY A THEORY AND SOMETHING THAT COULD NEVER BE ACHIEVED.



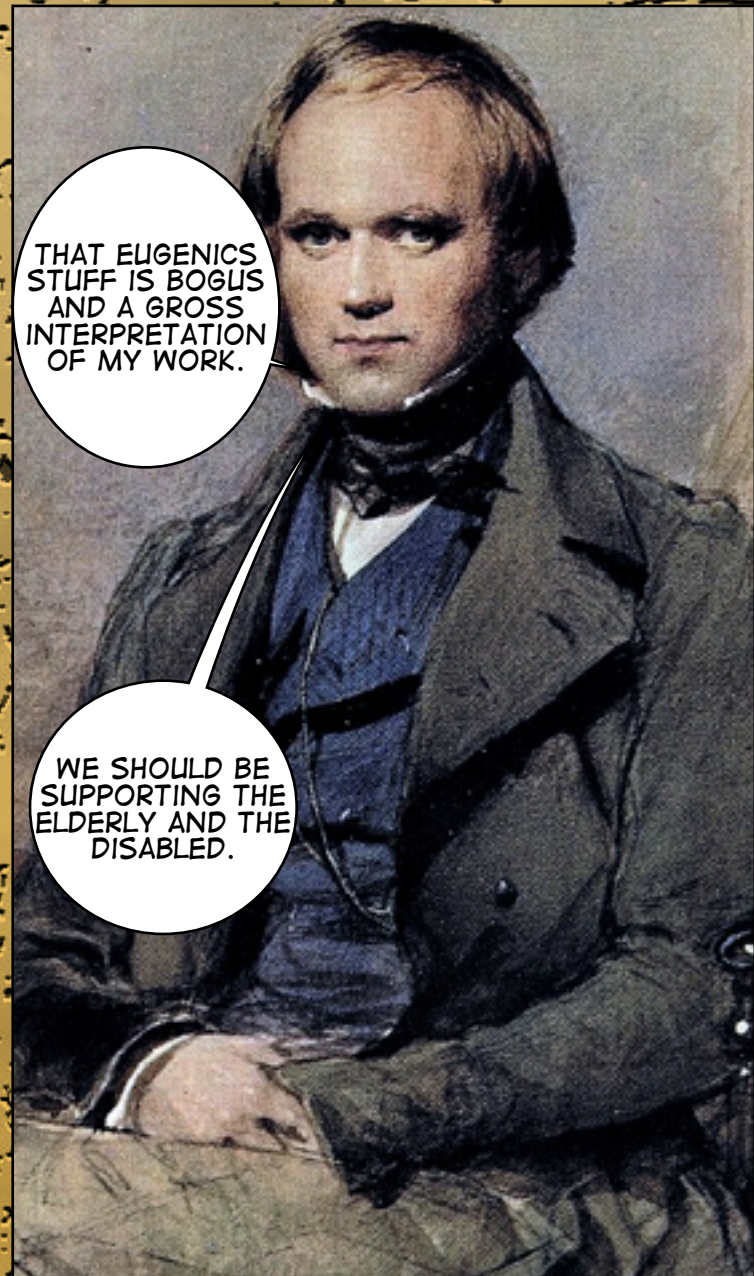
UNFORTUNATELY, MANY DID NOT LISTEN TO THE "THEORETICAL" PART OF HIS STATEMENT.



IN 1859, **CHARLES DARWIN** PUBLISHED "ON THE ORIGIN OF SPECIES".

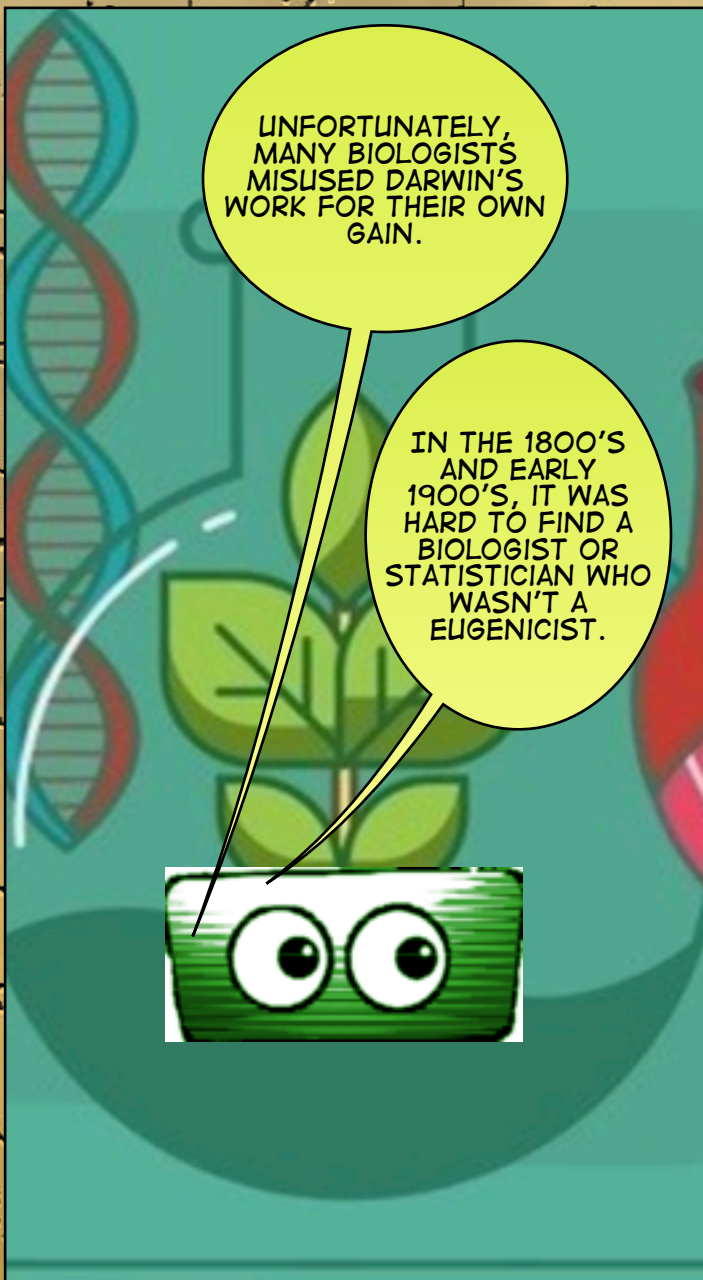
OVER TIME, ONLY THOSE WELL ADAPTED TO THEIR ENVIRONMENT WILL SURVIVE.

HE NEVER SAID ANYTHING ABOUT DESERVING.



THAT EUGENICS STUFF IS BOGUS AND A GROSS INTERPRETATION OF MY WORK.

WE SHOULD BE SUPPORTING THE ELDERLY AND THE DISABLED.



UNFORTUNATELY, MANY BIOLOGISTS MISUSED DARWIN'S WORK FOR THEIR OWN GAIN.

IN THE 1800'S AND EARLY 1900'S, IT WAS HARD TO FIND A BIOLOGIST OR STATISTICIAN WHO WASN'T A EUGENICIST.



HERE IS ONE OF THE MOST FAMOUS EXAMPLES.

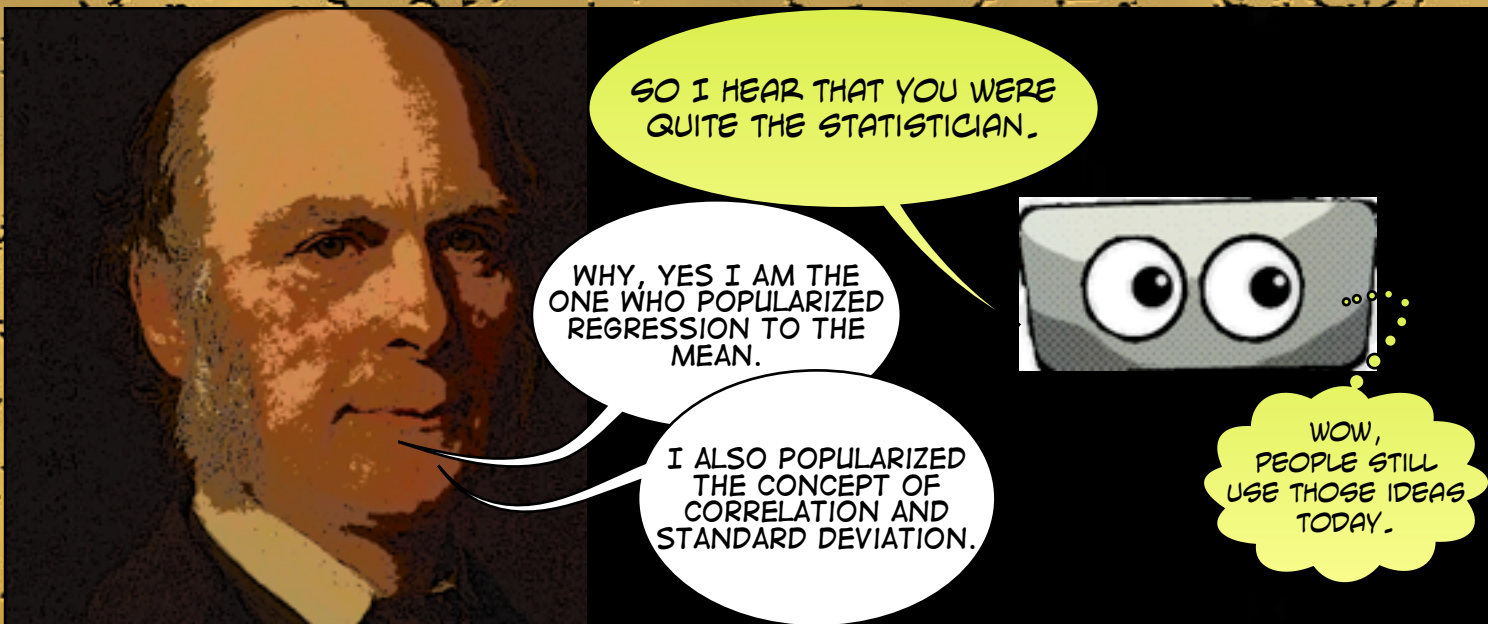
I AM WORLD SAVIOR AND PIONEER, **SIR FRANCIS GALTON**.

1910



WHO DARES SPEAK?

WE WANTED TO ASK YOU A FEW QUESTIONS ABOUT YOUR CAREER.

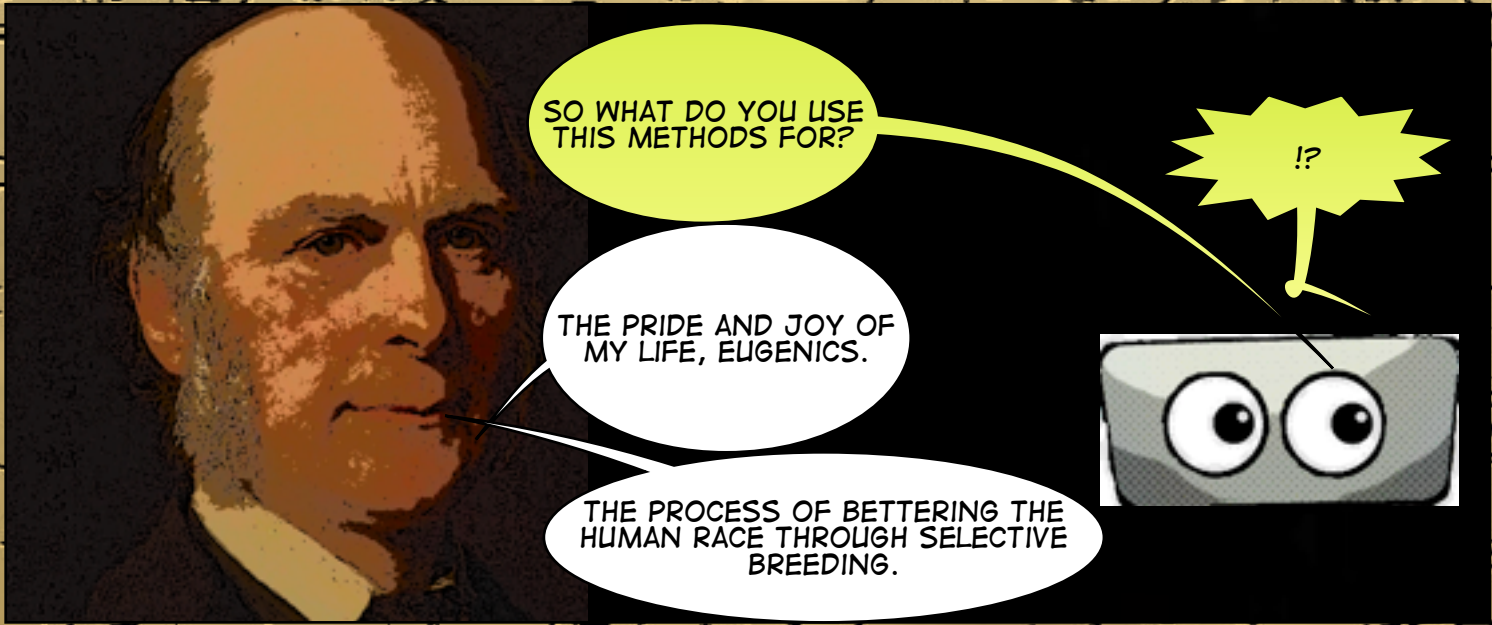


SO I HEAR THAT YOU WERE QUITE THE STATISTICIAN.

WHY, YES I AM THE ONE WHO POPULARIZED REGRESSION TO THE MEAN.

I ALSO POPULARIZED THE CONCEPT OF CORRELATION AND STANDARD DEVIATION.

WOW, PEOPLE STILL USE THOSE IDEAS TODAY.

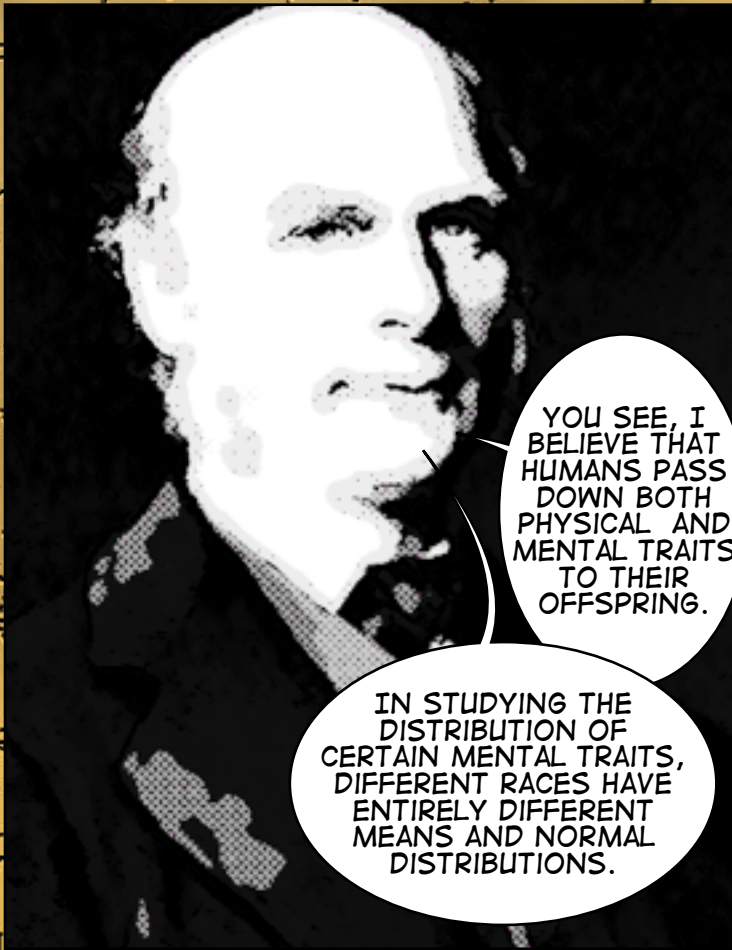


SO WHAT DO YOU USE THIS METHODS FOR?

THE PRIDE AND JOY OF MY LIFE, EUGENICS.

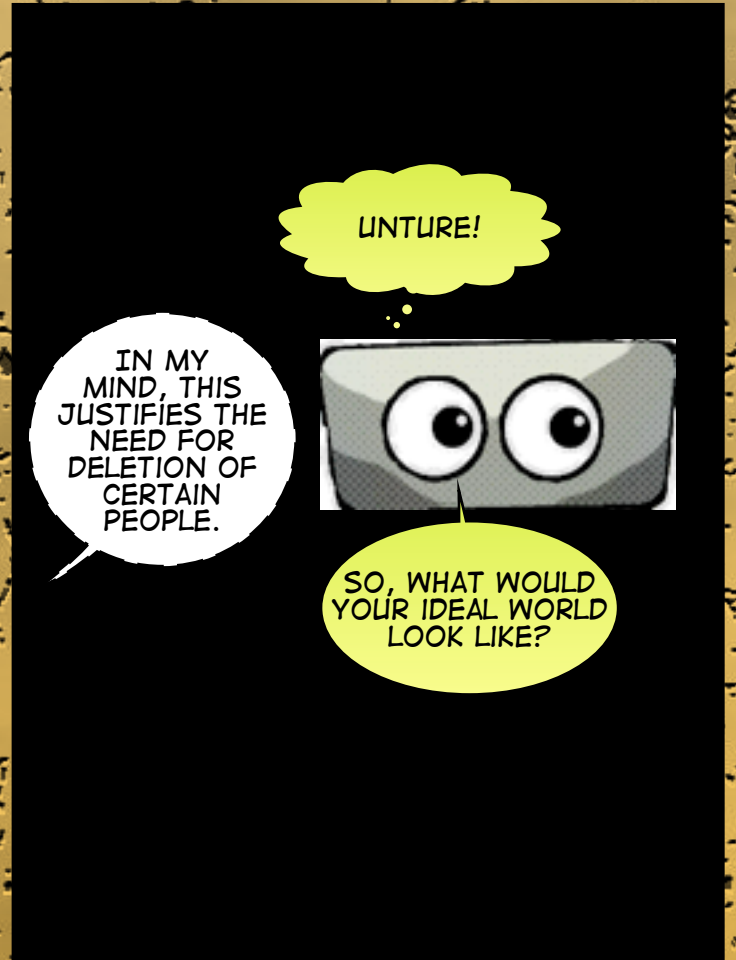
THE PROCESS OF BETTERING THE HUMAN RACE THROUGH SELECTIVE BREEDING.

!?



YOU SEE, I BELIEVE THAT HUMANS PASS DOWN BOTH PHYSICAL AND MENTAL TRAITS TO THEIR OFFSPRING.

IN STUDYING THE DISTRIBUTION OF CERTAIN MENTAL TRAITS, DIFFERENT RACES HAVE ENTIRELY DIFFERENT MEANS AND NORMAL DISTRIBUTIONS.



UNTURE!

IN MY MIND, THIS JUSTIFIES THE NEED FOR DELETION OF CERTAIN PEOPLE.

SO, WHAT WOULD YOUR IDEAL WORLD LOOK LIKE?



I PUBLISHED A BOOK ABOUT THIS ACTUALLY.

SADLY, VERY FEW PEOPLE ARE RECEPTIVE TO MY IDEAS.

I HOPE THAT IN THE FUTURE, PRIESTS RULE OVER THE POPULOUS. THESE PRIESTS. WILL DETERMINE WHO CAN MARRY AND REPRODUCE.


YOU SHOULD SCHEDULE AN INTERVIEW WITH MY PROTEGE, **KARL PEARSON**.



WE WILL TAKE YOU UP ON THAT OFFER.

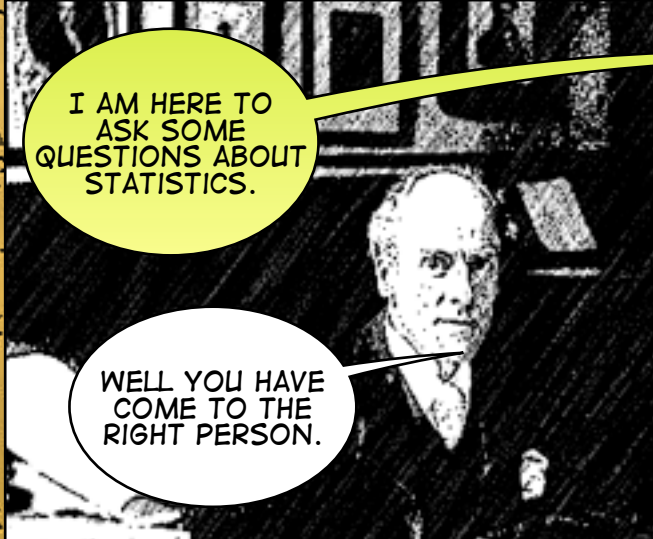
DID HE JUST TELEPORT?

WELL THIS IS **KARL PEARSON**...



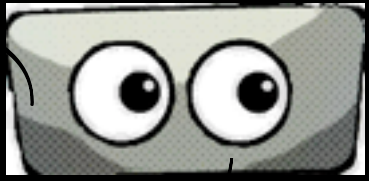
CAN I HELP YOU?

1925



I AM HERE TO ASK SOME QUESTIONS ABOUT STATISTICS.

WELL YOU HAVE COME TO THE RIGHT PERSON.



WHAT ARE SOME OF YOU GREATEST STATISTICS ACCOMPLISHMENTS?



I DEVELOPED THE HYPOTHESIS TEST, P-VALUES AND THE CHI-SQUARED TEST.

WHAT HAVE YOU USED THESE TESTS TO ACCOMPLISH?



THESE TECHNIQUES ALLOW US TO SEE IF A MODEL OR HYPOTHESIS IS CORRECT GIVEN THE DATA.



MANY PEOPLE'S TRAITS HAVE A BIMODAL DISTRIBUTION WHICH IS LINKED TO RACE AND NOT ENVIRONMENT.

I BELIEVE MANY FORCED STERILIZATION LAWS WERE CREATED IN THE U.S. DURING THAT TIME.

HITLER CREDITED PEARSON'S WORK AS AN INSPIRATION FOR HIS IDEAS.

MY TESTING HAS PROVEN GALTON'S HYPOTHESIS ON RACIAL DIFFERENCE.

I ALSO ATTEMPTED TO PASS LAWS TO CLEAR THE HOUSE OF LORDS OF BAD STOCK IN 1910.

WE NEED TO BE MORE SELECTIVE ABOUT BREEDING.



THANK YOU FOR YOUR TIME BUT, THERE IS ONE MORE PERSON WE NEED TO INTERVIEW.

THE FINAL STATISTICIAN OF NOTE TO CONTRIBUTE TO EUGENICS IS **RONALD FISHER**. I'VE INTERVIEWED HIM BEFORE, SO I WILL SPARE YOU FROM TALKING TO HIM.



1950

FISHER IS FAMOUS FOR INVENTING THE ANOVA TEST AND ESTABLISHING .05 AS THE APPROPRIATE P VALUE FOR ACCEPTING A HYPOTHESIS.



HE IS CREDITED FOR SPREADING EUGENICS TO THE UNITED STATES WITH BIOLOGIST **CHARLES DAVENPORT**. HE IS GENERALLY KNOWN FOR MAKING EUGENICS POPULAR AMONG THE BRITISH.



HE ACTIVELY SUPPORTED A LAW PASSED IN 1913 TO INSTITUTIONALIZE AND STERILIZE "FEEBLEMINDED" AND PHYSICALLY DISABLED PEOPLE.

HE ALSO ACTIVELY SUPPORTED NAZI EUGENIC IDEAS AND EVEN WROTE A DISSENTING OPINION WHEN THE UNITED NATIONS CONDEMNED THEIR DISCRIMINATORY PRACTICES.

SPEAKING OF THE NAZI PARTY, THEY ARE EASILY THE MOST INFAMOUS USERS OF STATISTICS.

ANYONE DEEMED TOO DIFFERENT FROM THEIR IDEAL PERSON WAS REMOVED AND PROBABLY MURDERED.



THEY USED THE IDEAS OF THE AFOREMENTIONED STATISTICIANS TO JUSTIFY THEIR ACTIONS.

THE ODDS OF A GIVEN EUROPEAN BEING KILLED BY NAZIS DURING THAT TIME WAS 6-7%.

IN GERMANY ALONE, AT LEAST 173,500 PEOPLE DIED BECAUSE THEY HAD A PHYSICAL OR MENTAL DISABILITY.

IF YOU THOUGHT THE ERA OF EUGENICS ENDED WITH THE FALL OF HITLER, YOU WOULD BE DEAD WRONG.

ABLEISM, RACISM, HOMOPHOBIA, SEXISM AND RELIGIOUS PERSECUTION ARE STILL RAMPANT TODAY.

YOU HEAR ABOUT SOMETHING TERRIBLE EVERY WEEK.

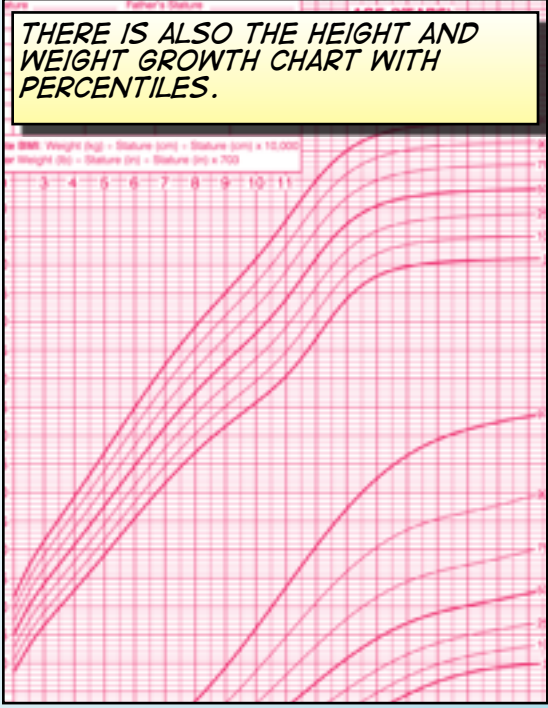
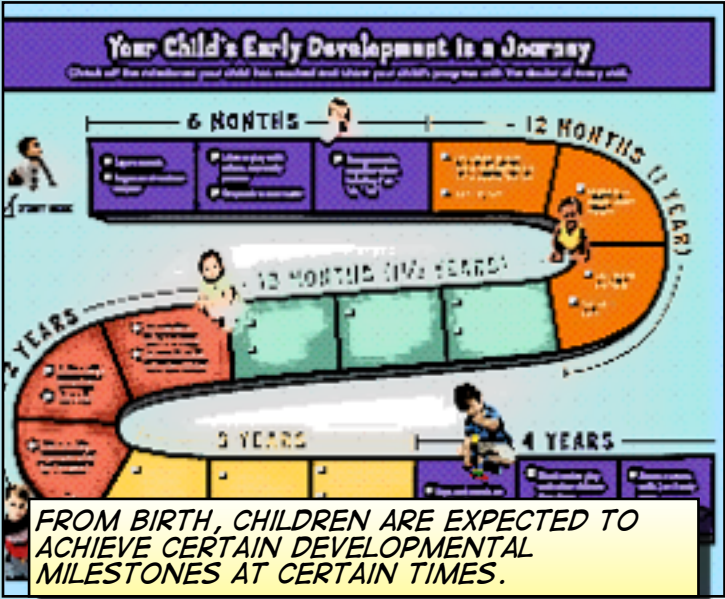
ALTHOUGH IT IS GENERALLY UNACCEPTABLE TO THINK THAT PEOPLE DESERVE TO DIE BECAUSE OF THEIR TRAITS OR UPBRINGING, THIS SAME BASIC DECENCY IS OFTEN NOT GRANTED TO DISABLED PEOPLE.



BEFORE PEOPLE ARE EVEN BORN, THEY ARE TESTED FOR VARIOUS GENETIC CONDITIONS. DOCTORS ARE THEN ABLE TO RECOMMEND TERMINATION OF PREGNANCY.



AN ESTIMATED .5 TO 3% OF ABORTIONS ARE DUE TO THE "PHYSICAL HEALTH OF THE FETUS".

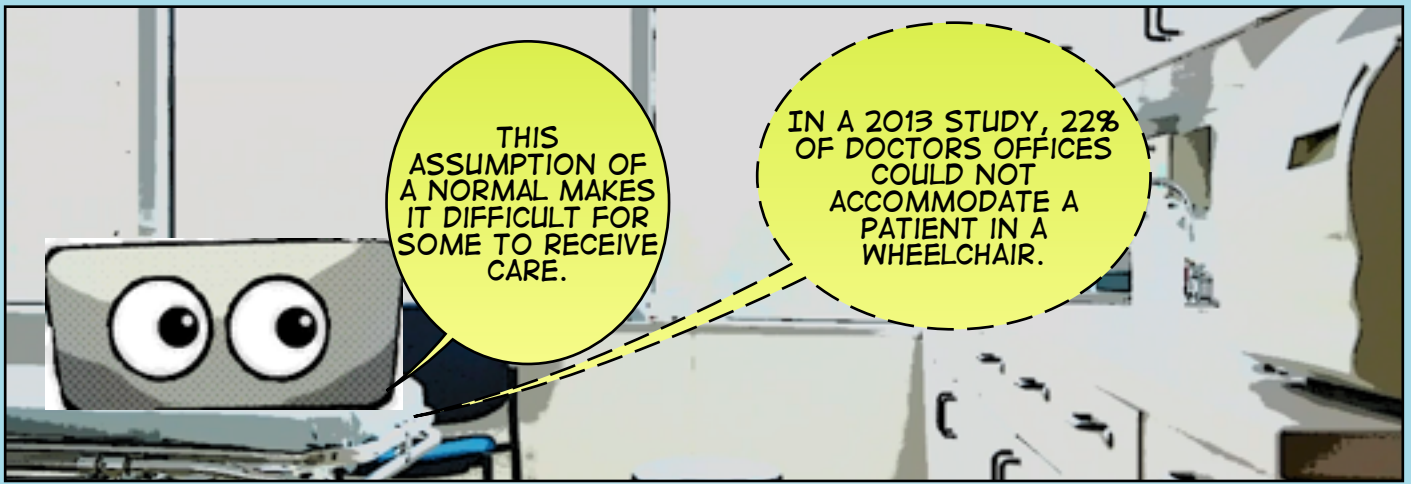


THERE IS ALSO THE HEIGHT AND WEIGHT GROWTH CHART WITH PERCENTILES.



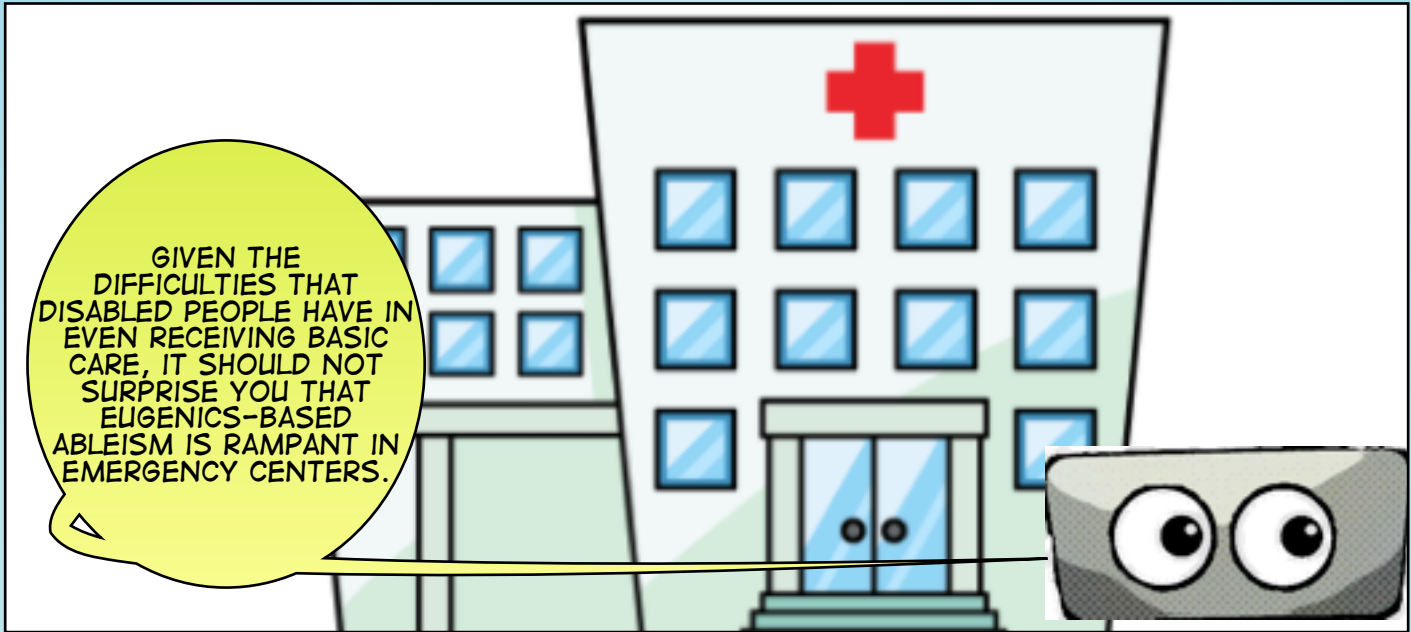
ANYONE BEHIND ON THESE LINEAR PROGRESSIONS IS CONSIDERED DELAYED.

THESE DEVICES WOULD NOT BE POSSIBLE WITHOUT COMPARING VARIOUS PEOPLE AND ESTABLISHING A NORMAL.

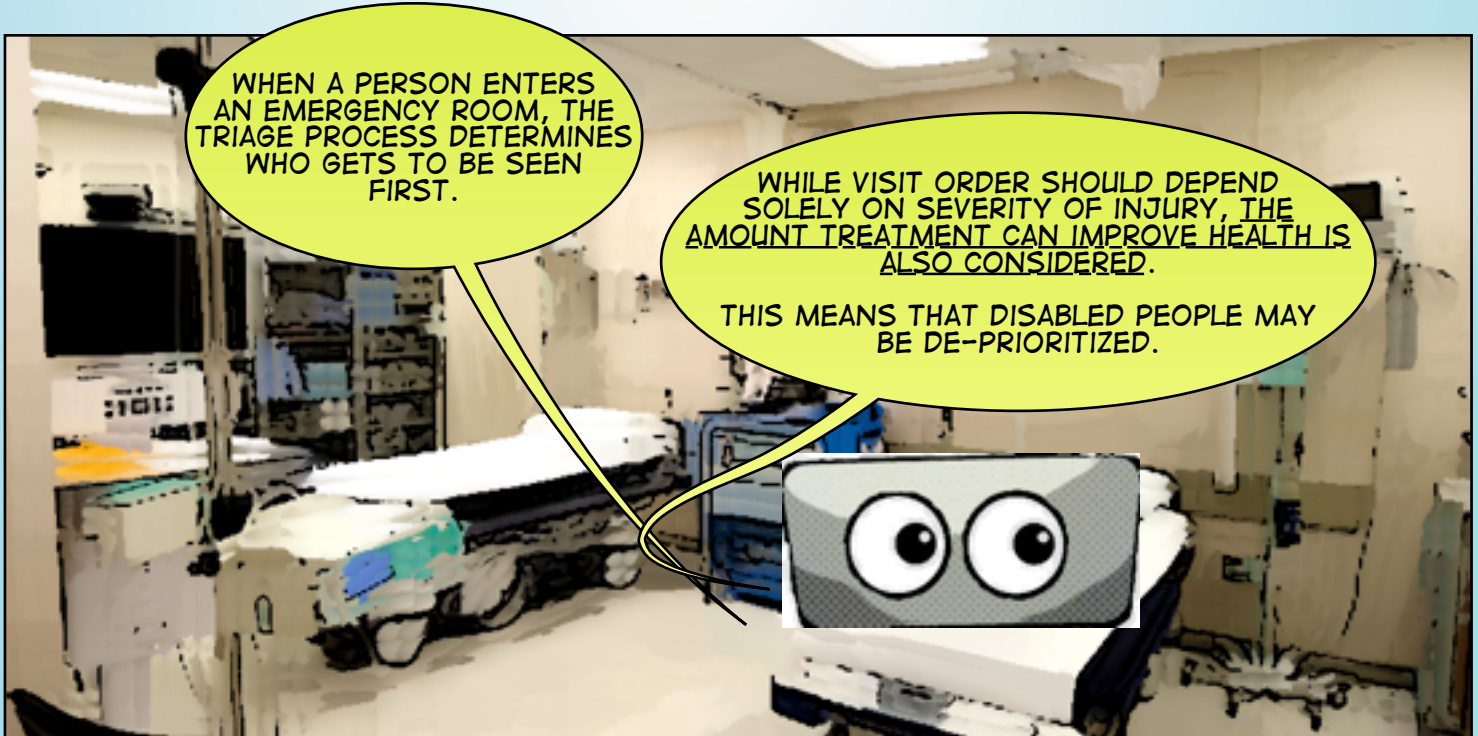


THIS ASSUMPTION OF A NORMAL MAKES IT DIFFICULT FOR SOME TO RECEIVE CARE.

IN A 2013 STUDY, 22% OF DOCTORS OFFICES COULD NOT ACCOMMODATE A PATIENT IN A WHEELCHAIR.

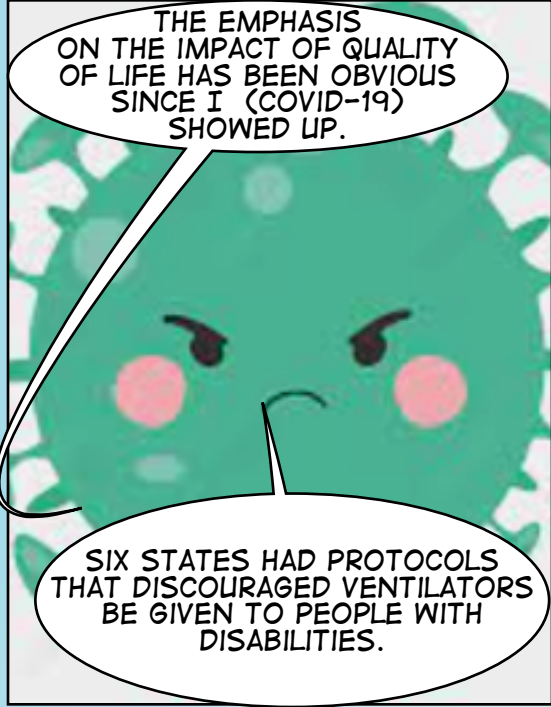


GIVEN THE DIFFICULTIES THAT DISABLED PEOPLE HAVE IN EVEN RECEIVING BASIC CARE, IT SHOULD NOT SURPRISE YOU THAT EUGENICS-BASED ABLEISM IS RAMPANT IN EMERGENCY CENTERS.



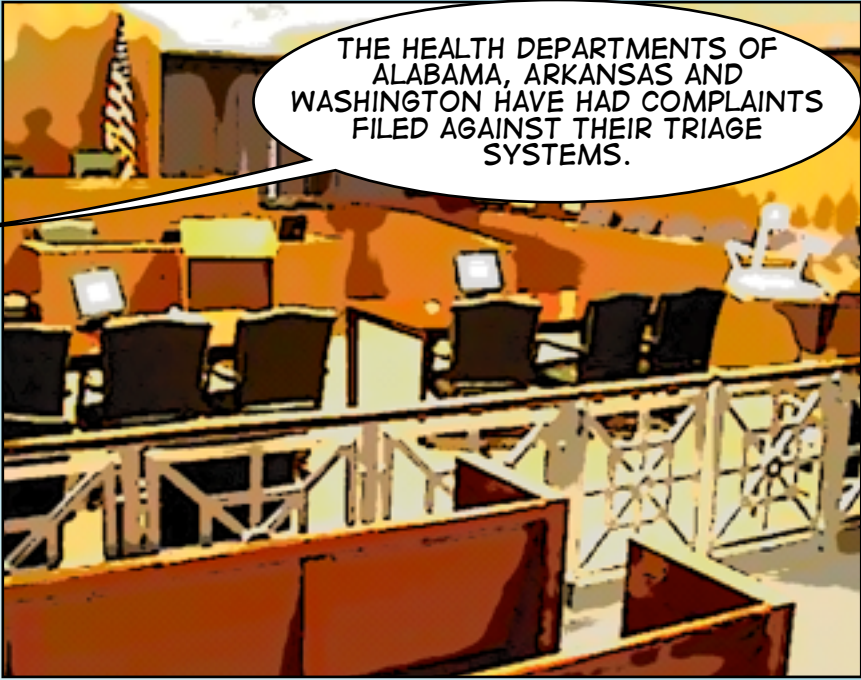
WHEN A PERSON ENTERS AN EMERGENCY ROOM, THE TRIAGE PROCESS DETERMINES WHO GETS TO BE SEEN FIRST.

WHILE VISIT ORDER SHOULD DEPEND SOLELY ON SEVERITY OF INJURY, THE AMOUNT TREATMENT CAN IMPROVE HEALTH IS ALSO CONSIDERED.
THIS MEANS THAT DISABLED PEOPLE MAY BE DE-PRIORITIZED.

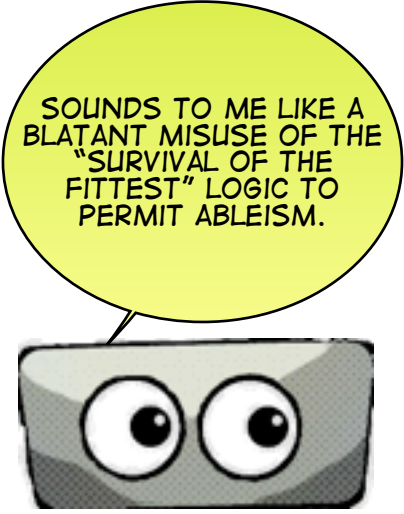


THE EMPHASIS ON THE IMPACT OF QUALITY OF LIFE HAS BEEN OBVIOUS SINCE I (COVID-19) SHOWED UP.

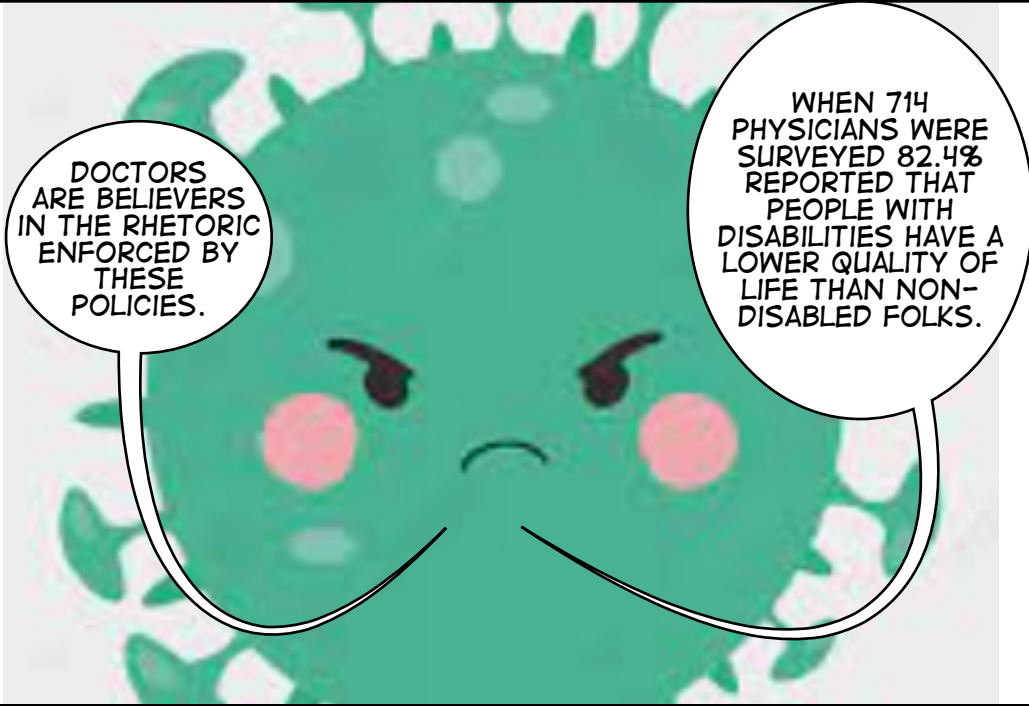
SIX STATES HAD PROTOCOLS THAT DISCOURAGED VENTILATORS BE GIVEN TO PEOPLE WITH DISABILITIES.



THE HEALTH DEPARTMENTS OF ALABAMA, ARKANSAS AND WASHINGTON HAVE HAD COMPLAINTS FILED AGAINST THEIR TRIAGE SYSTEMS.




SOUNDS TO ME LIKE A BLATANT MISUSE OF THE "SURVIVAL OF THE FITTEST" LOGIC TO PERMIT ABLEISM.



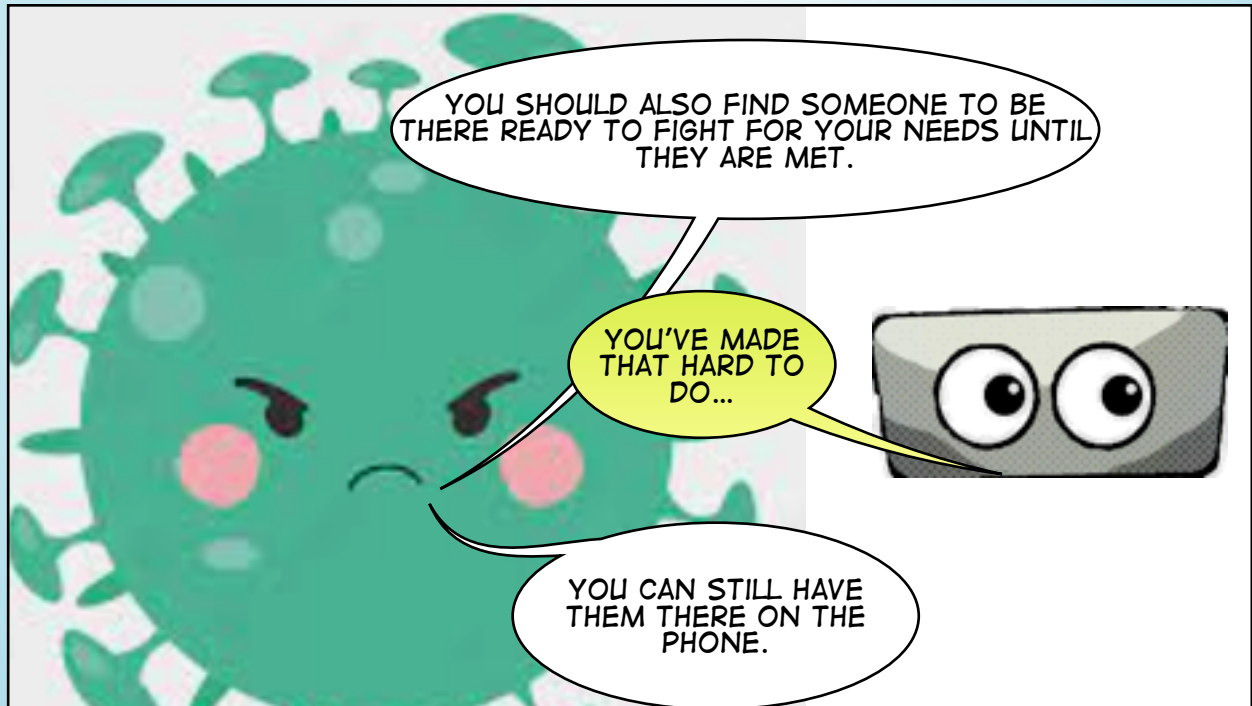
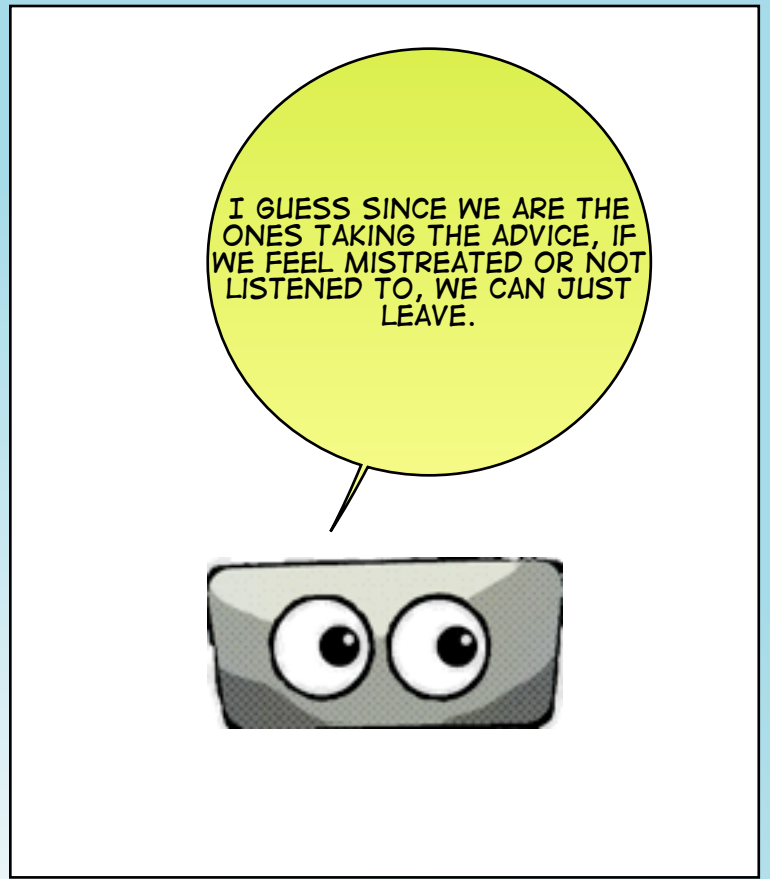
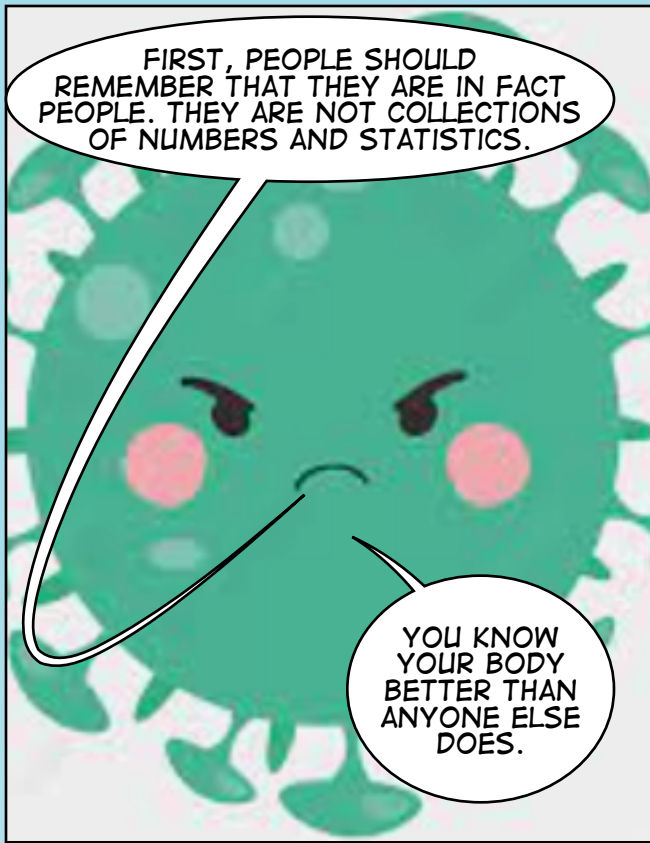
DOCTORS ARE BELIEVERS IN THE RHETORIC ENFORCED BY THESE POLICIES.

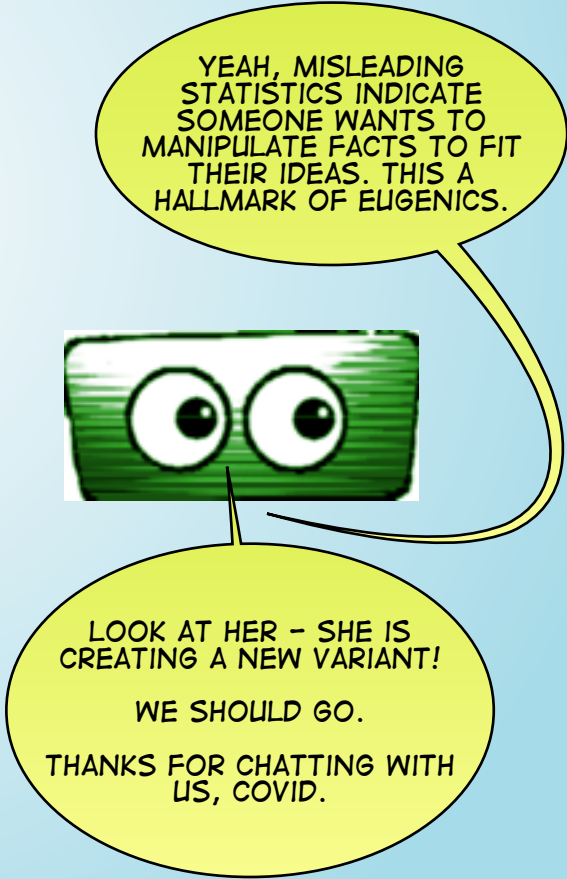
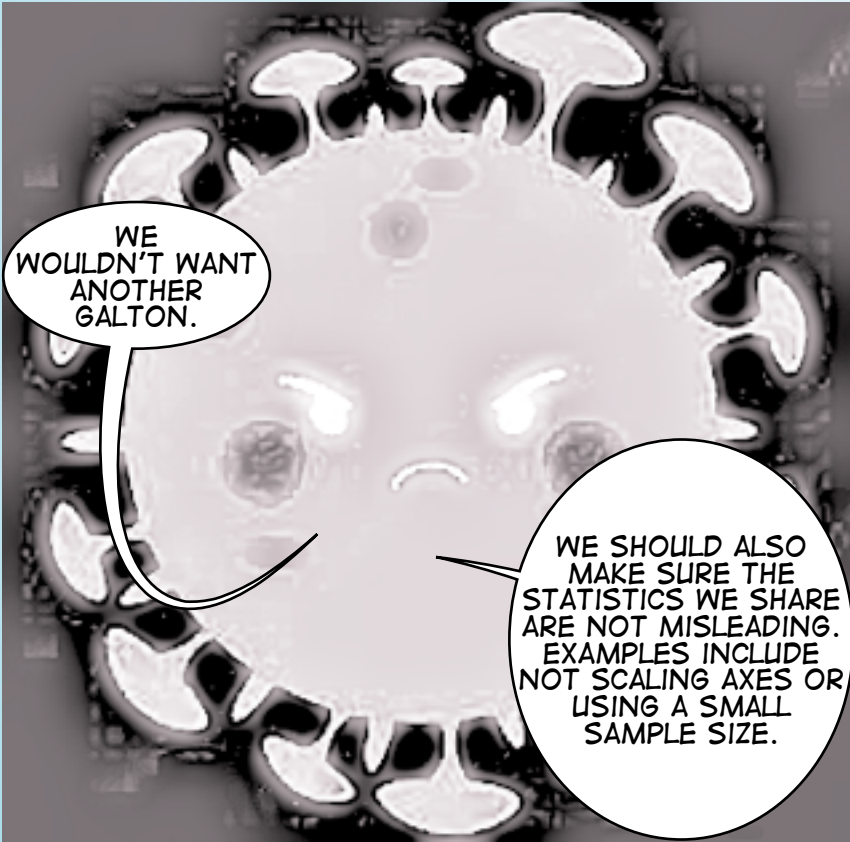
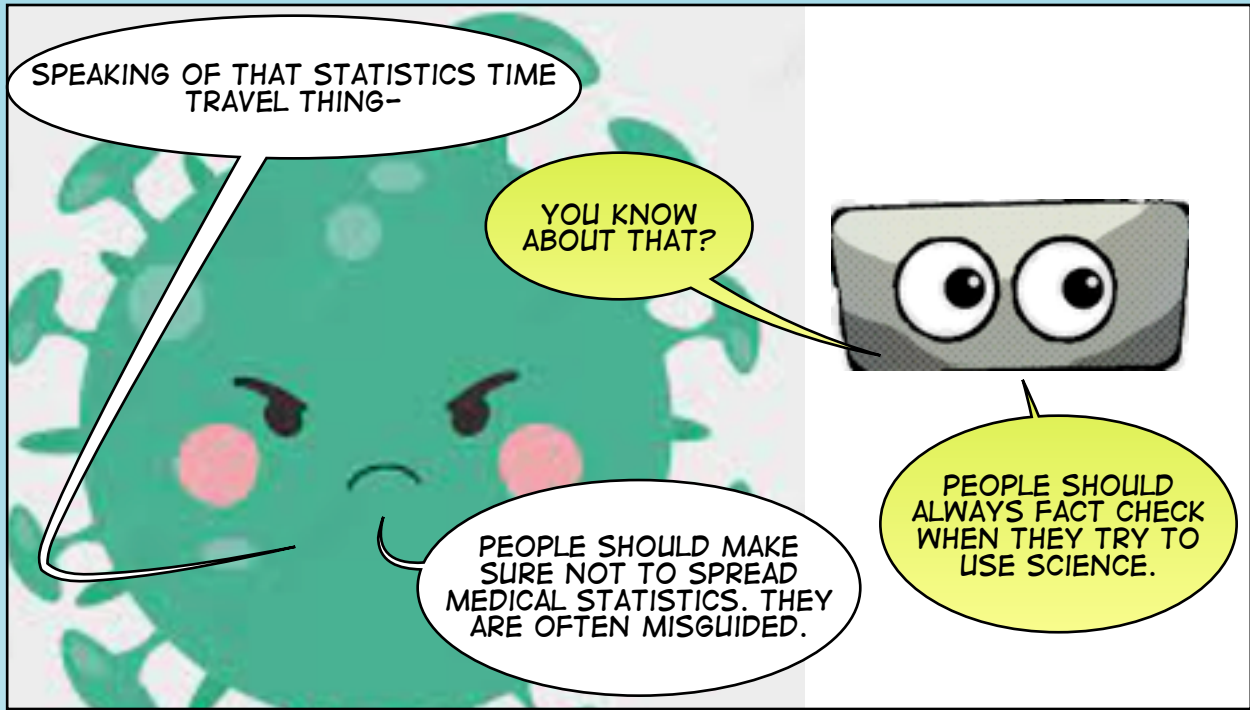
WHEN 714 PHYSICIANS WERE SURVEYED 82.4% REPORTED THAT PEOPLE WITH DISABILITIES HAVE A LOWER QUALITY OF LIFE THAN NON-DISABLED FOLKS.



HEY I AM A REPRESENTATION OF A DISABILITY. I AM WORRIED THAT THESE STATISTICS WILL PREVENT ME FROM RECEIVING ADEQUATE CARE.

WHAT DO I DO???





THAT WAS A CLOSE ONE. I SHOULD PROBABLY GO QUARANTINE TO BE SAFE.



ANYWAY, I HOPE YOU FOUND THIS ADVENTURE INFORMATIVE.



I KNOW THIS WASN'T WHAT YOU WERE EXPECTING.

DATA IS A POWERFUL TOOL, BUT WE MUST LET IT SPEAK FOR ITSELF AND ACCOUNT FOR BIAS.



THE END

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