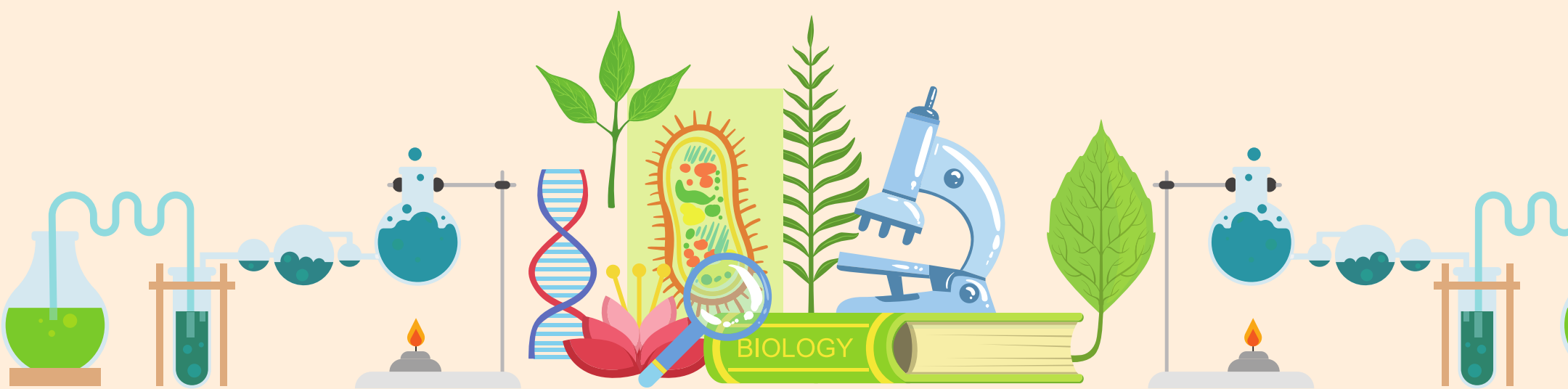


SCIENCE, SEX, AND SOCIETY.

Exploring the intersections of biological sex, gender diversity, and the history of science.



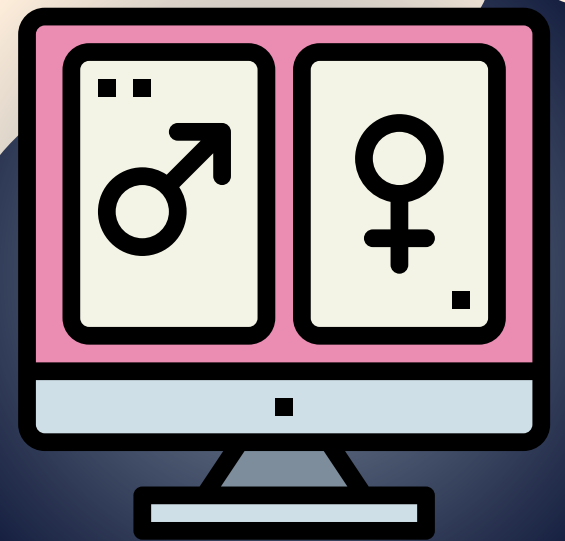
SEX VS. GENDER



- Sex and gender are not the same.
- Gender is a social construct.
 - It exists in human society, not nature.
- Historically, sex was understood to be exclusively binary.
 - New scientific research suggests this is not the case.
- Sex and gender are often conflated (or believed to be the same thing).
 - This perpetuates harmful myths that claim gender is binary.



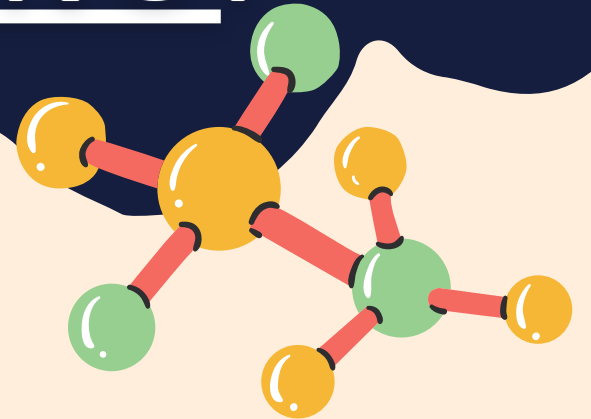
THE BIOLOGICAL SEX BINARY IS A SOCIAL CONSTRUCT TOO.



- The sex binary is the belief that biological sex is binary.
- It's important to recognize that this is an idea created by people, and is, in fact, another social construct.
- Science does not occur in a vacuum.
 - Commonly held beliefs (like binary gender) influenced the idea and science of binary biological sex.

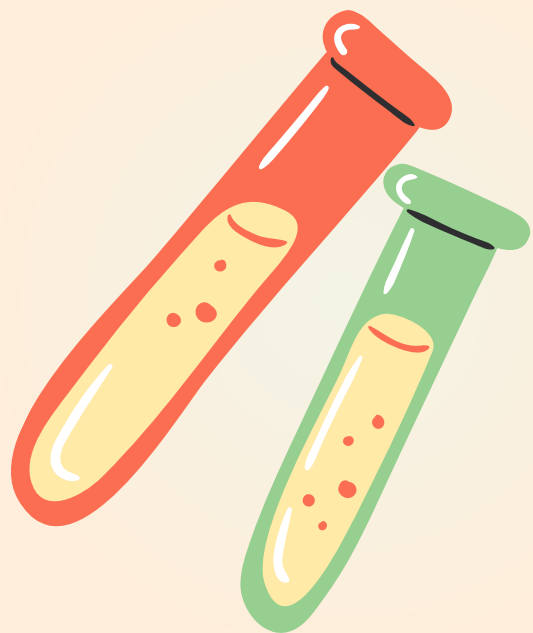


THE SCIENCE OF SEX AND GENDER IS CHANGING.



- For centuries, scientific research substantiated the idea of a human biological sex binary.

- This means scientists investigated and collected evidence in support of binary sex.



- (In other words, no one was investigating the idea that sex might not be binary.)

- Today, more research is coming out that supports the idea that sex is not binary.

GENDER (AND SEX) DIVERSITY AREN'T NEW.



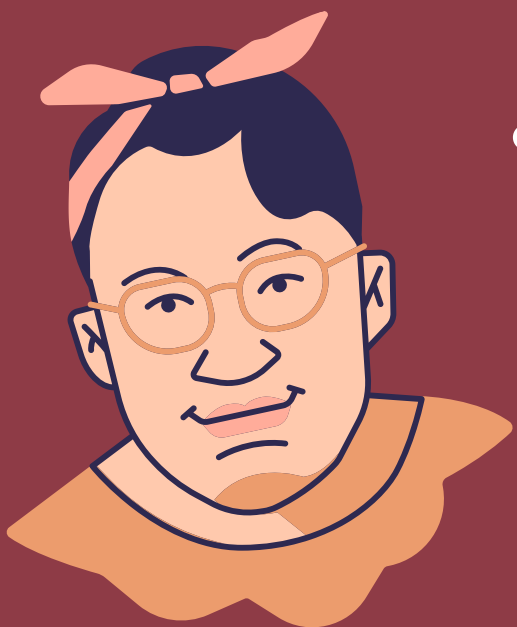
- Throughout human history, diverse genders have existed and have been documented.



- These identities include the hijra (India), two-spirit (Indigenous American), māhū (Polynesia), and mukhannathun (early Islam).



- In society today, intersex people are recognized as existing outside of the biological sex binary.





SCIENCE AS A COLONIAL TOOL.

- Expansive genders have been historically erased through colonization.
 - Science (particularly harmful ideas like eugenics), contributed to this erasure by pathologizing and criminalizing people who fell outside of the gender and sex binaries.
- Throughout scientific history, queer people were legally and medically deemed disordered or perverse.
 - Through this systemic marginalization, the science of sex was used as a tool to uphold white supremacy.

SOCIETY INFLUENCES SCIENCE.

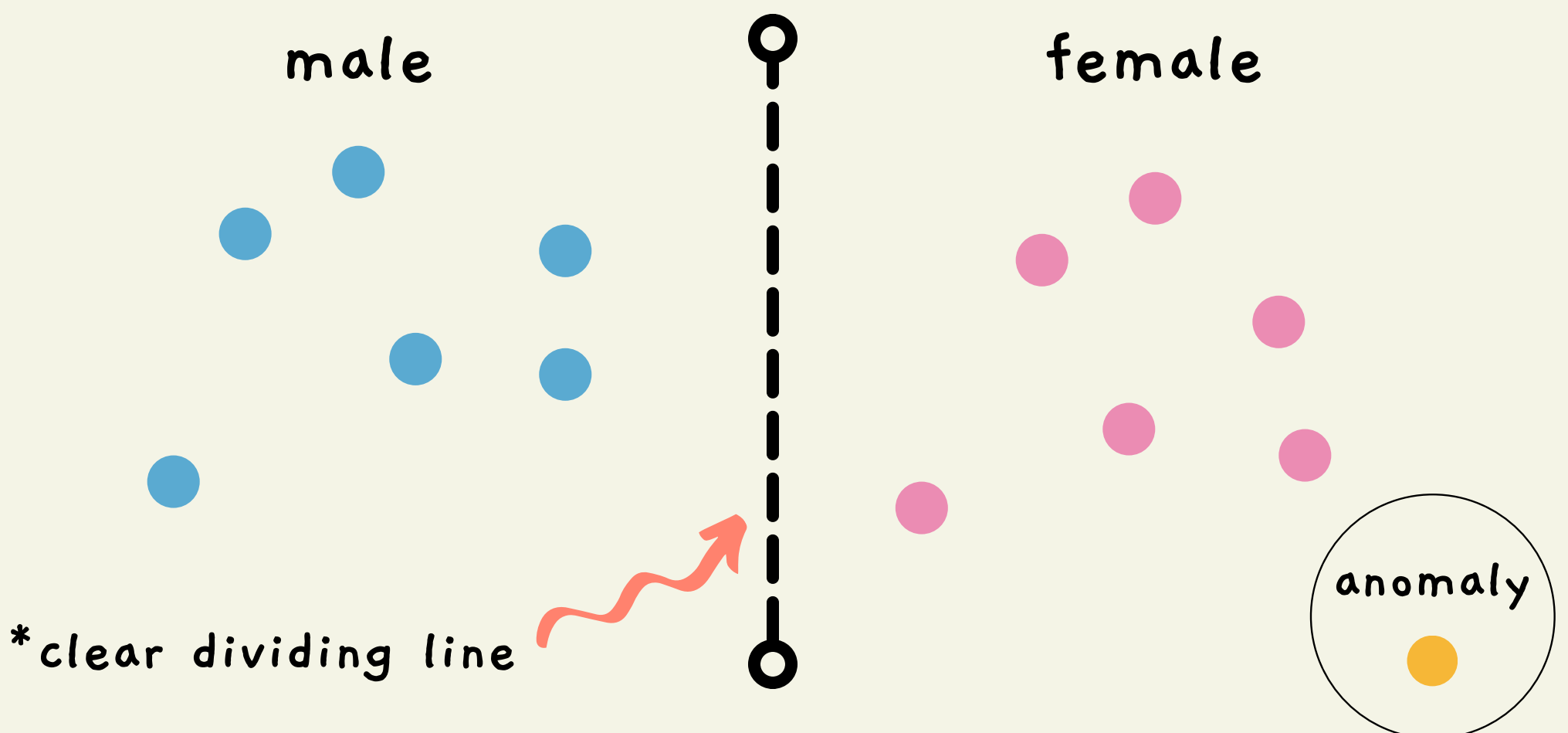


- Science strives to be objective, (meaning not influenced by beliefs or emotions).
- However, scientific information has always been shaped by culture, politics, and other social phenomena.
- This doesn't mean that science isn't real!
 - It just means that science is fluid and ongoing (much like human identity).



OUTDATED MODELS OF BIOLOGICAL SEX.

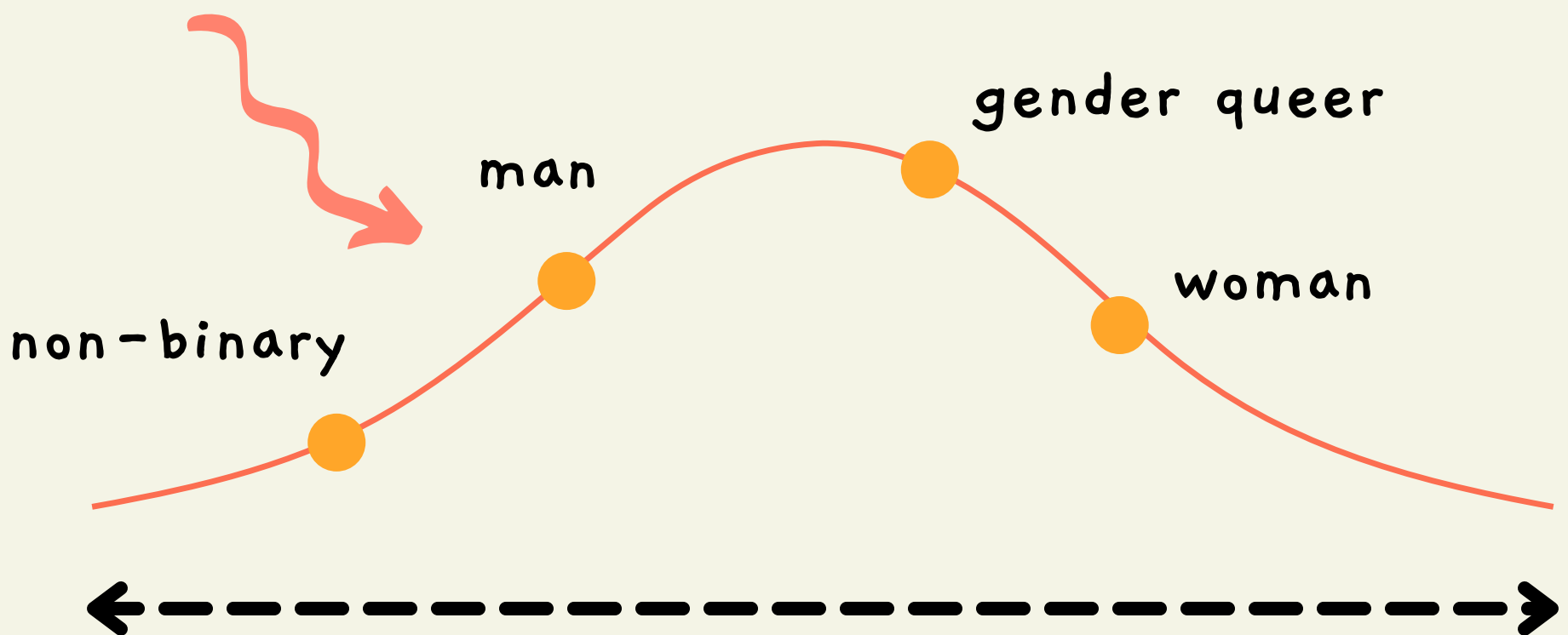
- In the past, it was believed that people fit into neat categories of male or female.
 - Any outliers (such as intersex folks) were considered rare, an anomaly, or disordered.



MODELING NONBINARY BIOLOGICAL SEX.



*no clear dividing lines



"...while any two people may have very different phenotypes (e.g. gender identities), the entire population exists along a single spectrum with no clear divisions (e.g. no line between 'cis' and 'trans' identities)." (Wren et al., 2019)

NO BINARIES IN NATURE.



- Binaries make a lot of sense to us because they are easy to understand and interpret.
 - But nature is filled with examples of exceptions to binaries.
 - Binaries are a human invention.
- Thus, gender should be seen not as a result of a biological binary, but rather as a factor in its social construction.
 - In this way, science and society are deeply intertwined.