Term Project Universe Planning
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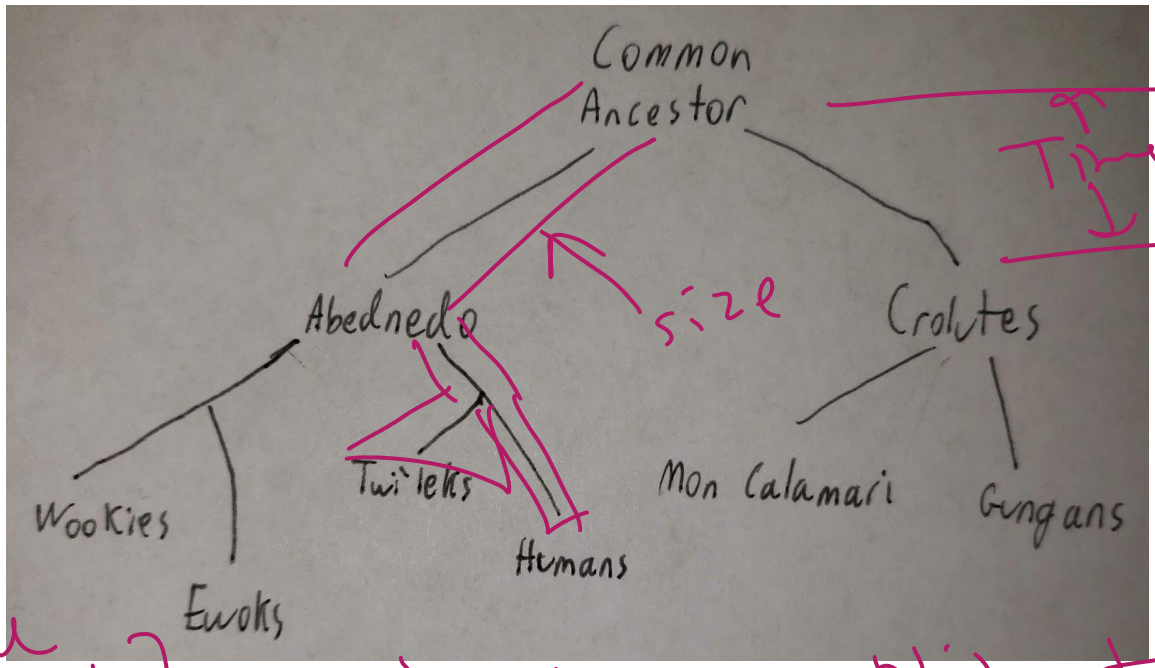
Simulated Universe

The fictional universe we will be simulating is the Star Wars universe. Created by George Lucas in the 1970s, it is a sprawling galactic epic that has become the basis of many films, books, and attractions. In an unnamed galaxy (far far away), there are many planets with a large variety of unique life forms, and the events within this galaxy and interactions between its species form the plot for this universe.

Population History in the Star Wars Universe

Our research indicates the two earliest species in the universe are the Abednedo and the Crolutes, with some unknown common ancestor. We've chosen to model these populations as all having a common ancestor, because there is no indication that life evolved independently on each of the planets, and colonization is mentioned very early on. The Abednedo were a mammalian species, and the Crolutes were amphibious. As such, we have taken those two to be the common ancestors for the mammalian and amphibious species, respectively. Because the number of different species in this universe is so vast, we've chosen to focus on the ones that have been more prominent in popular culture. Descended from the Crolutes, Gungans and Mon Calamari are both amphibious-humanoid species, diverging at some unknown point in the past. Moving on to mammals, the descendants of the Abednedo branch into humanoids with and without fur. Furry mammals include Wookies and Ewoks. Humans and Twi' leks constitute the non-furry mammals.



are there any bottlenecks? indicate time of splits & pop size on all parts of tree

Find resources w/ suggested genes that might be involved w/ these

Genes Under Selection

Respiration - Having both amphibious and mammalian species, at some point, genes controlling respiration (underwater vs. not underwater) must have been under strong selection.

Fur - Presence of fur in some individuals could have governed the separation of Wookies/Ewoks from other mammalian species. Additionally, Twi'leks have absolutely no other hair on their skin besides eyelashes.

Size - Particularly in the Wookie and Ewok species, size appears to have been under strong selection as Ewoks are nearly universally around 3 feet tall and Wookies are known for being substantially taller than average human height.

Eye shape/placement - While Crolutes do not have protruding eyes, their descendents, Mon Calamari and Gungans do, and these varied and pronounced eye shapes and placements could have been essential to speciation.

Skin color - While both Twi' leks and humans have a variety of different skin colors within their populations, the colors are distinct between species (with minimal overlap), and so there must have been some selective force driving this speciation.

Head shape - Most of these species have basically human-shaped heads - round/ovular, with some notable exceptions. Particularly on the amphibious side, mon calamari and gungans each have very unique head shapes, indicating perhaps some selective importance. Additionally, Twi'leks have long appendages protruding from their skulls, called lekku, providing further evidence of selective importance.

Comments

nice!

Some events taking place within the Star Wars universe could have an impact on how we simulate these populations. For example, the introduction of hyperspace travel in the universe would allow for much more rapid and far-reaching mixing of populations and population splits. This is something that could be played with in a simulation.

It's also noteworthy that each species in this simulation are intelligent; individuals within populations can look out for each other. Their civilizations have high-quality infrastructure, so individuals who would be less likely to survive independently may have higher effective fitness as a result.

think more about these details.

References:

Universe Timeline:

https://starwars.fandom.com/wiki/Timeline_of_galactic_history

Universe Species Description:
https://starwars.fandom.com/wiki/Species/Legends
https://www.denofgeek.com/games/star-wars-the-evolution-of-the-25-greatest-alien-species/