

WORLD BUILDING MONTHLY

POPULATING A WORLD

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LETTER FROM THE EDITOR



Dear Readers,

The third issue of Worldbuilding Monthly Magazine is here! Inside this issue the team tackled themes and articles revolving around the central theme of “populating your world,” I hope you enjoy!

“Populating your world” was chosen because we wanted to create more in depth analysis and content for the sub in areas we thought could use it. Worldbuilders (myself included) often tend to gloss over the fundamentals of ecologies that makes planets believable, and that’s totally okay if you do. We just thought every aspect of worldbuilding would be cool to cover that might not get covered otherwise.

As for the organization of the magazine, we are currently in the middle of changing workflows and solidifying roles to make future magazines easier to create. So much organizing. It’s fun.

For the next issue, the team has decided to cover history as a theme. We want to attack this from every angle to make it realistic, fun, and easy to create histories of your own. If you would like to write an article about history, please contact me!

Cheers,

A stylized, handwritten signature in black ink. It features a large, sweeping loop that starts under the 'u' and extends to the right, with a smaller loop above the 'N'.

u/UNoahGuy

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LORDHENRY7898'S [SPACE 2017]

Gangsterduck

World Showcase

LordHenry7898’s world [SPACE 2017] is about humans and an alien race called the Slb who are abducted by incompetent aliens known as the Sleen under the control of a competent supercomputer. These abductees now have to deal with the fact that they are not coming home. This world was started on April 14th, 2017. LordHenry7898 also took inspirations from Star Trek, Rick and Morty, and the news.

What is your method for populating the world?

I mostly improvise, and go with my gut instinct. I look at my world and see if it could use a race here or there. When I actually create the races, I focus on stereotypes and how other races view them.

What are your aliens like? And how did you design them?

I try to have a mix of different kinds of aliens. On the one hand, I have human-like aliens, like the ones you'd see on Star Trek, then there's shapeshifters, and aliens resembling piles of tentacles. In between, there are giant bugs and big fleshy columns. I use two methods to design aliens. The first is to make them a literal version of their stereotype. For example, one of my races, the Danaxu, try to see all sides of a situation, always. How do we make this literal? That's easy enough — they have radial symmetry. They see all sides of themselves. If that doesn't work, I start with features that will make them memorable, then see where it leads me from there.

What makes your aliens inhuman?

The easiest answer to this would be the way they look. Of course, it gets a little deeper than that. Their behavior is deliberately... alien, yet still (I hope) unsettlingly familiar.

Can you describe each race a little? How they organize/what they look like?

Danaxu are 6-sided flesh pillars covered in eyes and mouths. They’re often described as irritatingly

cold and emotionless. Horl are piles of tentacles who love to build. To date, their biggest accomplishments include the self-contained universe Land/Sky, the artificial planet Sky/Land, and a planet made of meat, built for an unnamed client with strange tastes. Fax are giant bugs with orange and gray patterns on their carapace. They are stereotyped as arms dealers, because... well... they **are** arms dealers. Before joining the Systems United, the Fax had an entire culture built around gunrunning. The Sleen are essentially John Carpenter’s The Thing. If you cut off a chunk of these shapeshifters, it will behave like a new animal. The And are descended from a tribe of Neanderthals abducted during the last ice age. They are distinguishable by their neanderthal features, and a gray mottling from living on Land/Sky. They are wildly hedonistic, and will do their utmost to take pleasure in everything they do. This has led to others seeing them as sickeningly oversexed, but the And couldn’t care less.

So the And live in an artificial universe the Horl created?

Yeah. The galactic government, the Systems United, uses it as a capital. It's sort of an inside-out Coruscant. At the center is a red dwarf that provides energy for the whole structure.

Did the Horl abduct the And and put them there?

No. They were originally abducted by a group of Sleen, (abduction is very very illegal, by the way. It's the equivalent of removing local flora and fauna from their habitats), but were caught by Systems United law enforcement. Now, the Danaxu have figured out that the abductees would have to stay in space, since (especially for primitive ones) the knowledge that people exist in space could have very unforeseen consequences. At least, that's what they claimed. What they really meant was that they didn't want primitive species getting angry that aliens are abducting their people.

Since you have a lot of very different races, how well do they get along with each other?

They mostly get along with each other, but there is one very divisive issue: abductees. Because of the Primitive Species Isolation Act (legalese for "they're here, now they can't leave"), anybody from a primitive world (read: not in the SU) abducted by aliens (after the And, the two most common abducted aliens are humans and the Slb) have to find a place to live. Many SU residents don't want the abductees there, which manifests by helping them get back home, or burning down the abductees' apartment blocks. Obviously, these 2 groups get in fights over the best ways to get rid of abductees. The other half don't mind them, and often attempt to help the abductees by finding them jobs, protecting them from arsonists, or lobbying for abductee rights. Fights are common where abductees are concerned.

Why do they abduct people in the first place?

For a variety of reasons. Scientists need disposable test subjects, promiscuous aliens want a new, exotic partner, or sometimes it's just teenagers pulling off drunken shenanigans.

What are your creatures like? And how did you design them?

My creatures, mostly root in the ground, then digest their own brain (like the sea squirt). Though there is one critter of mine of which every part is extremely valuable. Its skin makes wonderful leather. Its brain and nervous tissue can be used to make very efficient computer systems. Even its poo, while hallucinogenic, has a myriad of medical uses (but it's used for money, instead).

As for actually designing the creatures, I currently do it on the basis of "hey, this looks cool". I hope to get more technical later, though.

What are your plants like? And how did you design them?

Right now, plants don't exist beyond "there are trees here." or "this grungy urban slum needs some vines crawling up these walls" They're mostly there to look aesthetically pleasing for now.

How did you make interactions between creatures and plants?

In the future, I hope to create a symbiotic relationship between some plants and animals. But for now, because plants are mostly aesthetic additions, I can't do much.

What are your nations like? And how did you build them?

I haven't made any nations other than the Systems United yet. And they're incredibly reactionary. If something happens, somebody's going to blame something/someone, and next thing you know, there's a ton of new laws in effect. A lot of my worldbuilding for the SU comes from the news. I wonder what would happen if, say, the travel ban on people from Muslim countries hadn't been struck down. And I put a lot of this into the SU. 🐼

THE FIRST STEPS

by Hexarch

Worldbuilding is a fun hobby in itself, but some people like to combine it with a passion for storytelling. It's common for science fiction and fantasy stories to take place in settings conjured up by their creator, and our goal is to teach our readers how to build excellent worlds. If we've done our job, you'll have a detailed world that makes sense on the large scale and the small. However, a question arises when you set out to tell a story in it. How do you introduce your audience to your labor of love? Your world has an important part to play in the tale, so it's important that they know how it works. The ultimate key is to start slowly, but there are many ways to do that.

The most important tip to remember is to not begin your story with worldbuilding. As much as you want to show it off, your audience is not going to stick around for your world, but your characters. No matter how complicated and unique your setting, start your story with a scene the audience can easily grasp. A chase, a trial, a wedding, something they will have personal experience with. While they're interested in the action, you can slip little bits of worldbuilding in. If your characters are being chased, a description of the pursuers can be used to explain pieces of the world. The story role of the pursuers (to chase the main characters) is easily understood by the audience, which makes a description of them an interesting spice to the meat of the story. The key to this slow-drip method is to make sure everything you describe about your world has some relevance to the characters in the moment.

An excellent example of this is the first few chapters of the A Song of Ice and Fire series by George R.R. Martin. We meet two important characters named Daenerys and Viserys in the third chapter. Their family, the Targaryens, were mentioned once in each of the previous chapters, but not talked about in depth. In the first chapter, we're told that they were Kings before Robert Baratheon. In the second chapter, we're told that they were on the losing end of a civil war with Robert Baratheon. Now that the reader knows these two pieces of information, they're primed and ready for everything we learn in the third chapter. More importantly, the information we get about the Targaryens doesn't slow the flow or seem out of place in any of the scenes where it's mentioned. In the first chapter, they're mentioned in a conversation about Kings having executioners. In the second chapter, they're brought up in the context of King Robert coming to visit. It's natural and unobtrusive. If you cannot avoid a massive dump of information, make sure to build up to

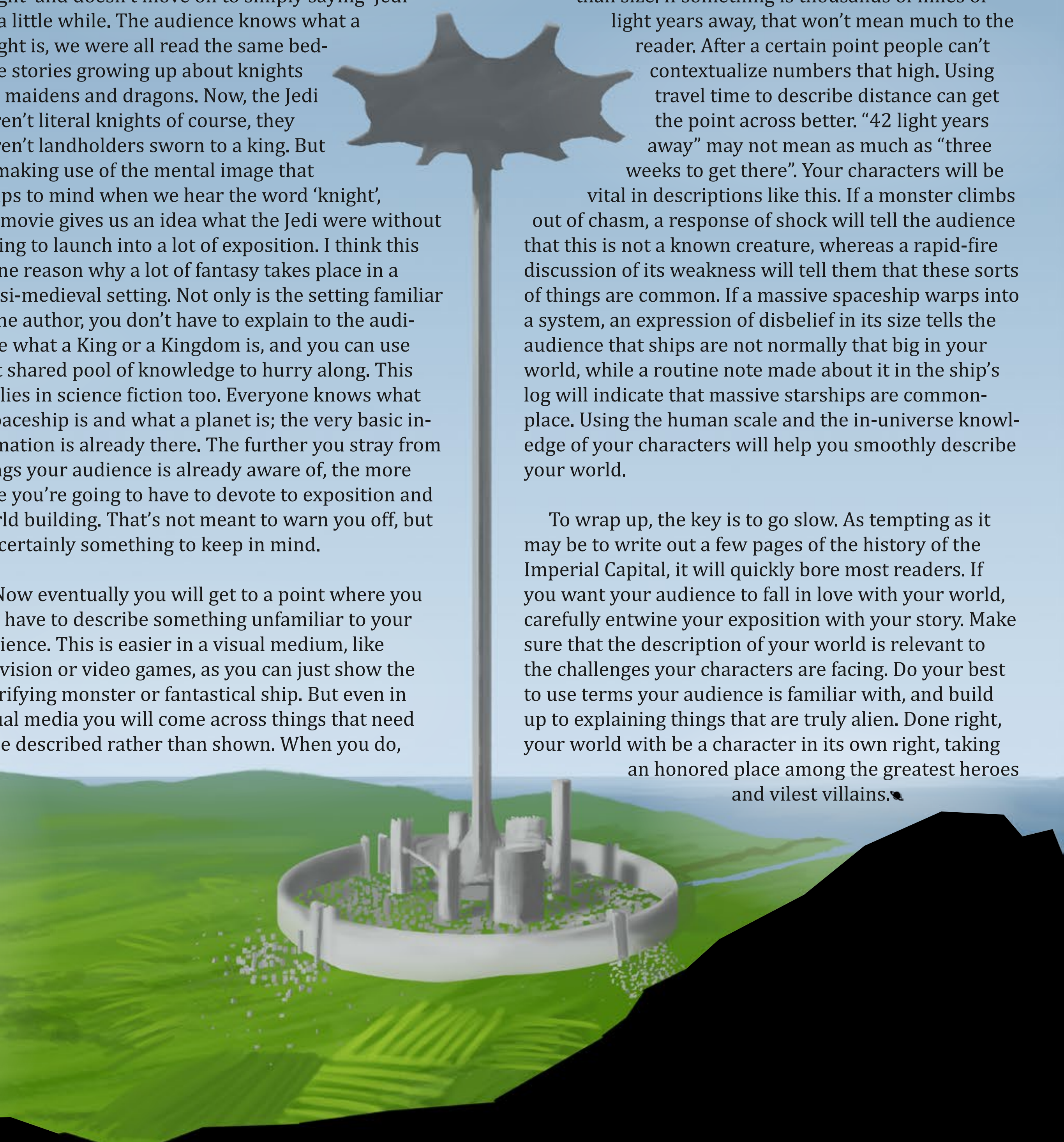
Make the characters interested in it, make the information vital to the story and if possible, the current moment.

One of the best tools to use when describing your world is using what your audience already knows to help get the point across. The best example I can think of for this is Star Wars, A New Hope. Kenobi has just rescued Luke from the Sand People and is telling him about his father. When you watch this scene, note how, at least for the first few times they mention it, Obi-Wan always says 'Jedi Knight' and doesn't move on to simply saying 'Jedi' for a little while. The audience knows what a Jedi Knight is, we were all read the same bedtime stories growing up about knights and maidens and dragons. Now, the Jedi aren't literal knights of course, they aren't landholders sworn to a king. But by making use of the mental image that pops to mind when we hear the word 'knight', the movie gives us an idea what the Jedi were without having to launch into a lot of exposition. I think this is one reason why a lot of fantasy takes place in a pseudo-medieval setting. Not only is the setting familiar to the author, you don't have to explain to the audience what a King or a Kingdom is, and you can use that shared pool of knowledge to hurry along. This also applies in science fiction too. Everyone knows what a spaceship is and what a planet is; the very basic information is already there. The further you stray from things your audience is already aware of, the more time you're going to have to devote to exposition and world building. That's not meant to warn you off, but it's certainly something to keep in mind.

Now eventually you will get to a point where you have to describe something unfamiliar to your audience. This is easier in a visual medium, like television or video games, as you can just show the terrifying monster or fantastical ship. But even in textual media you will come across things that need to be described rather than shown. When you do,

try to use the human scale as much as possible. In other words, describe it in terms that a person can relate to. If you're writing a science fiction story and there's an alien ship landing, you don't want to say something like 'the alien ship was 13.7 meters long'. It knocks the reader out of the description when they try to figure out just how long that is. A better thing to say would be "the alien ship was the size of a school bus". The reader will likely know how big a school bus is and they can go on reading uninterrupted. This is also useful for references other than size. If something is thousands of miles or light years away, that won't mean much to the reader. After a certain point people can't contextualize numbers that high. Using travel time to describe distance can get the point across better. "42 light years away" may not mean as much as "three weeks to get there". Your characters will be vital in descriptions like this. If a monster climbs out of a chasm, a response of shock will tell the audience that this is not a known creature, whereas a rapid-fire discussion of its weakness will tell them that these sorts of things are common. If a massive spaceship warps into a system, an expression of disbelief in its size tells the audience that ships are not normally that big in your world, while a routine note made about it in the ship's log will indicate that massive starships are commonplace. Using the human scale and the in-universe knowledge of your characters will help you smoothly describe your world.

To wrap up, the key is to go slow. As tempting as it may be to write out a few pages of the history of the Imperial Capital, it will quickly bore most readers. If you want your audience to fall in love with your world, carefully entwine your exposition with your story. Make sure that the description of your world is relevant to the challenges your characters are facing. Do your best to use terms your audience is familiar with, and build up to explaining things that are truly alien. Done right, your world will be a character in its own right, taking an honored place among the greatest heroes and vilest villains. 🐉



DEFINING WORLDBUILDING

by Adam Bassett

It is easy to assume that worldbuilding is about creating your own world from scratch, or at the very least it's easy to get caught up in creating everything for a universe that is uniquely yours. You've determined how the food chain works in the wild, the common faiths and cultures present in the civilization that lives nearby, and how they contrast with the neighboring folks'. Perhaps you have explained the existence of dragons, or vampires, or this weird new creature of your own invention which protects, instead of devours, those who it grows attached to. Unfortunately for the beast it's got a maw like a crocodile's and beady eyes that strike fear into any sane person. Within moments you've written backstories and history that spans decades about the beasts and the people whose entire livelihood is dedicated to hunting them. There's even a festival where the good townspeople indulge in celebrating the hunters, culminating in a dance that portrays the hunt and the kill of the misunderstood beast.

Which is fantastic—and by all means, get lost in and explore your world.

However this sort of world, one which is vast and complex and entirely new, is not all that worldbuilding is about.

Worldbuilding is about creating a unique setting, as well as the inhabitants of it, and exploring the culture and life of those who live there. It is about recreating life as we know it, what *is* possible, while exploring the impossibilities. Yes, at times this is to tell fantastical stories; be it within Dungeons & Dragons, a story you're writing, or as a tool to immerse people in games such as *Mass Effect* and *Eldritch Horror*. At other times worldbuilding is very subdued — rather than describing the world in detail creators may only suggest information when appropriate, or in a medium of their choice. One of my favorite examples is Jennifer Egan's *A Visit from the Goon Squad*, published in 2010. If you've never read the book, here's the gist; it's a collection of short stories which intertwine and progress without any linear timeline. They take place in the modern-day United States (with one segment taking place in Italy, I believe),

and because of it so much of the world is familiar. Egan didn't have to explain cell-phones, tennis, or kleptomania very much; she instead deals with common items, familiar settings, but in unique or compelling ways. This is where her worldbuilding begins to be interesting. Egan switches characters every chapter, or shows you them at a different time in their life; the woman who starts the story goes away for a while but you see her again as a college student, and again as a mother. Egan builds the settings around the situation that character is in — a restaurant, the campus, and her home. In a very short time Egan builds her world around the character in question so that the reader can follow what is happening, while she simultaneously uses the setting to inform the reader about the character.

One of Egan's more interesting chapters is written entirely in the form of a powerpoint presentation printed on the pages in landscape formatting. I wanted to highlight this because, even though this doesn't specifically show us the setting for this chapter, it does tell us a great deal about the character who's made the powerpoint-style journal, and about how technology has influenced her life. Plenty of books are in the format of a journal, keeping a log of the main character's survival or day-to-day life. We have apparently reached the point where it is okay to publish a story in a powerpoint format — that is absolutely fascinating to me.

The closing of the book took place in the future — perhaps the mid 2020's — and she took care to craft a vision of the future that was both familiar and strange. She touched on the progression of social media (a character sorts through over 15,000 friends), slang (both the break-down of language in texting and new slang in spoken conversation), how music has changed (anything unaltered is astoundingly strange and new), and city surveillance/protection. These are all small touches but they add up to make the final chapter of *A Visit from the Goon Squad* something special. Previously Egan had done well setting the scene, informing the reader of which character is the protagonist and firmly rooting them in the world we know. This final chapter has crescendoed into

worldbuilding far greater than anywhere else in the book, and no part of it was ever out of place.

Another author, Edwidge Danticat of *The Dew Breaker*, educates her readers about the places and cultures she discusses. Not all are unfamiliar — the places in the United States were easy enough to understand — but she amplifies her worldbuilding efforts when she takes the reader to Haiti, and when Haitian culture becomes important to the various character’s stories. I know little and have never spent a lot of time learning about the island nation, yet she was able to construct a vision of Haiti around 1960 that an uneducated person such as myself found easy to follow.

While I think Egan and Danticat are exceptional examples of subdued worldbuilding, they are restricted to a certain medium. Since it would not do us good to only explore novels and short stories let’s step away for a moment. I would like to turn

to a game I mentioned earlier, in which both the heavy-handed, explicitly detailed worldbuilding so many of us are used to exists alongside subtler methods like conversations and small interactions. *Mass Effect* has a setting rich with alien civilisations and history within each. BioWare, game’s developer, has created a long timeline with the original trilogy dating from before 1,000,000,000 BCE to 2819 CE. It serves as a detailed guide, delivered through an in-game encyclopedia of sorts called a codex, which allows the player to delve into much more information than they would normally have access to by simply playing through the game. The history and culture of each species is alluded to through the game’s locations and conversations with others, allowing the player’s experiences to help them further understand the entries in the codex. The subtler worldbuilding experienced by the player in their gameplay works, and it is supplemented by the offering of much more information.

At *Worldbuilding Monthly* we have spent a bit of time talking about the concepts of high fantasy and map generators, but before we get too caught up in genre-specifics I wanted to remind everybody that worldbuilding is not exclusive to fantasy or sci-fi; although, I admit, it does happen to be especially fun in those genres. Worldbuilding is a method of constructing and expanding a fictional world through the settings, characters, and cultures present in it — all of which must inform the other. Sometimes that does mean a grand-scale sci-fi or fantasy, along with it all the dwarves and elves that make your version special. Sometimes worldbuilding is just a very detailed and intricate setting right here on Earth. It could even be a guitar and a singer, and the audience who has come to see the performance. 🎸



Credit: Tristen Fekete

STORYBOOK MAPS NEED STORYBOOK ORIGINS

by Austen Gray

Imagine your world, the one you have in your head perfectly laid out and easy to see. A familiar urge occurs as you think of it, a notion to create, evinced from the imagery your mind's eye generates. It may not be for the readers, but for your own internal consistency, to make sure the geography is on point.

Now come the paper and compass, rulers and stencils, lots of erasing, serious smudging, and keenly eyeballed straight lines. Problems you hadn't previously considered occur, but you make choices on the fly. You place rivers and plains, perhaps a continental ridge with a spacious inland ocean...

Then you reach the question, "This seemed so easy, but why doesn't this look like an actual map?"

Now the dimensions you wanted narratively don't pan out realistically. Your fabled "vast" oceans or endless Saharan deserts don't dominate the way they should according to your aesthetic senses. What's worse, there is no significance to much of the decoration on the map. A placeholder placed simply to fill a void is devoid of meaning. If you decide to undertake a real map, random placement does not usually work out in the end.

Using our present day Earth for inspiration, you wonder, "How did they get their lines?" Topologies like islands and continents are not random like a fractal map generator would have you believe. Rivers and mountains form ecologies which can be partially simulated in engines, but still seem disingenuous. The map you make can come from any era in your stories timeline, and is a still image in a timeline of progress and strife. Place your borders with care. Be clever and tell a story to the perceptive reader. Soon, your edges define themselves with geography, politics, wars and embargoes, you have to account for your dynamic borders.

The History Channel series by Brian Unger, ["How The States Got Their Shape"](#), is a good resource for this. The United States has very dynamic border shapes caused from "gerrymandering,"

legal disputes, and civil wars. A protuberance from an otherwise straight line is a visual cue. A straight line also tells a tale, was there a treaty, or was a latitudinal border determined? Is there a name like "West Virginia" to imply there was once only a Virginia? Why did they split? These questions can be conveyed in a flash if you take the care to develop it.

The complex borders seen in Europe, or like in Congressional Districts, have exact reasons for their existence. Wars that were fought, *people died*, trenches were dug, and forts "held the line" to constitute what you see now. New Orleans, Louisiana has a thoroughfare called "Rampart Street" which follows the trail soldiers fighting in the War of 1812 used behind the battlements to move along the front. The old "Three Mile Limit" for setting a nation's coastal boundary became necessary when everyone's maps clashed on who owned what water. North Korea still claims up to fifty miles, though it is not heeded.

Entire stories can be told in a single image, and the Herculean feat of charting one's world is a choice many authors forgo. Some would prefer to let the world live in the minds of the reader as a unique interpretation, as the writers of *Star Trek* chose to. While this can lead to inconsistencies, it's also easier for the writers to have the narrative flexibility necessary in a world as large as theirs. Terry Pratchett's *Discworld* takes another approach worth considering: "You can't map a sense of humor. Anyway, what is a fantasy map but a space beyond which There Be Dragons?"

His point is simple, let your audience make their own map. What people dream up for themselves can be as precious and unique as the story you are telling. Browsing fan creations of *Discworld* proves his point. Though there are now official maps, for so long it only lived in his readers minds. Such a thing is how you immerse readers and make them feel part of the story. It's similar to the film concept seen in "Inception", a person believes what they create from within.



Consider the Elder Scrolls games by Bethesda, featuring cleverly told stories that only have a visual component like [this article](#) mentions. When regarding your map, try to see if you can tell a story without words. Adding a solitary bridge connecting two vast coasts is interesting, or marking a series of border forts along canals easily adds flair. Familiarize yourself with the ancient maps before and after Alexander invaded the former [Island of Tyre](#), or when the “New World” was discovered by European powers, comparing the world maps from both eras.

Or, consider the [Planet Reach](#) from Bungie’s Halo series. Does the colossal hole in the Continent tell you any stories? The artwork is captivating, drawing the eyes to trace the splashdown path of the smaller inland crater oceans. This is not a plot relevant detail in the game, but to us, it is fodder for the imagination.

Mark your borders with care, let the story guide your decisions, reference real life conflicts. This will enrich both your visual storytelling and sense of worldbuilding, but most importantly, will impart *meaning and significance*. Remember to take notes along the way, before you know it, you will have an authentic collection of squiggly lines that tell you a thousand years of history at a glance.🐼



Credit: Bungie/Microsoft Studios

A MONOLOGUE ON MOUNTAINS

by Dheolos

For all of the possibilities of worlds that could be built, I far too often see the same few types appearing over and over again, desert worlds, grasslands, globe encompassing seas. But there are several biomes I think deserve more exposure. One such that I see passed aside in favor of other more commonly used biomes are mountainous regions, whether old, and eroded like the Blue Ridge range, or “new” and towering like the Himalayas. Each possessing flora and fauna well adapted to the often harsh conditions that can be found there. So, How can these places become unique settings for the stories that take place within them?

So what makes a makes a mountainous region unique for worldbuilding? What kind of people live there and what kind of environment do they inhabit? The terrain of such a region can vary widely across the world. However, for the purposes of this article, I will be focusing on two distinct biomes oft found in mountainous regions: Taiga and Alpine Tundra. Taiga, or coniferous forests are found at lower altitudes and are distinguished by evergreen trees and a much lower level of diversity of plant life than other regions by comparison. Alpine Tundra is the region above the tree line on mountains, where the winds are intense and temperatures are so consistently low that trees and large plants do not survive. This is not to say these regions lack flora. In fact there are many moss and small plant species that survive in this biome. Weather conditions are relatively cool in most areas for much of the year, with long, cold winters and short, cool summers. There are some areas shielded from the sun at high altitudes where snow and permafrost may persist year round. The fauna of these regions tends to consist of smaller, tree and ground dwelling animals such as squirrels and monkeys, though it is also home to goats, rams and other small to medium sized herbivores. Predators consist of large cats such as mountain lions and lynxes, as well as bears and birds of prey. These types fauna can be expected to be prevalent in the culture of the inhabitants, such as appearing in their myths and cultural practices. Some examples could be: A trickster god taking the form of a goat, a great hero who could take them form of a bear when fighting, and the eagle being regarded as a holy creature for being the chosen avatar of the king of the gods. Flora can be part of myths and cultural practices as well. The creation of a staple food could be at-

tributed to the clumsiness of the deity of the forest, or a flower that contains a mild hallucinogen could be used in religious rituals.

As previously stated, these are only a few examples of what a mountain range can look like. They can vary widely based on latitude, weather conditions, and surrounding biomes. This will lead to vastly different flora and fauna, result in vast differences in the diet and culture of those who reside there. A desert mountain dwelling culture might have reptiles be more prevalent in their myths, while inhabitants of a jungle range may include monkeys and other species native to the region.

In regards to water, you can expect to see freshwater streams from snow and glacial thaw as well as runoff. These streams then combine to form rivers that carve out canyons on their way to the coast. These rivers often are chock-full of rapids and waterfalls that make navigation and commerce difficult. These rivers may also present a valuable source of food from large fish such as salmon as well as water for irrigation purposes. Other water sources can include lakes at lower altitudes as a result of glacial melt and ponds that may be present higher as a result of trapped rainwater and runoff. Due to the location of these lakes and ponds, it is very unlikely for them to naturally possess fish. However, this does not preclude them from being home to birds and amphibians even at higher altitudes. Hot springs may also be present even areas that are not geologically active. While the temperatures and mineral concentrations found in these waters may render them hostile to water dwelling life, they may attract land dwelling species. One such example is the the Japanese Macaque, a primate species known to frequent hot springs found in Nagano, Japan. Human civilizations may also take advantage of lower temperature hot springs for bathing or medicinal purposes, though temperatures in more geologically active regions may preclude human use.

One important thing to consider when creating a mountain dwelling culture is the specific type of range they inhabit. Some older mountain ranges such the Alleghenies and Blue Ridge are older and have been heavily worn down. Mountain ranges of this type may be some of the oldest on Earth. Their slopes may be more gentle and their peaks lower on average due to millions of years of erosion. As a result, they may be more likely to possess exten-

sive vegetation in more wet regions. They may be more conducive to farming as well as possess a more vast mineral wealth of materials such as coal. A younger mountain range by comparison could be the Himalayas which are a much higher range pushed upward by the collision of two continental plates. This range possesses much less vegetation and mineral deposits, instead possessing a large number of glaciers. Ranges like these possess some of the highest peaks on the planet, ones that reach well into the altitudes where life is almost impossible. The peaks are often accompanied by sheer drops and severe weather conditions that challenge even the best and most daring climbers on the planet. Mountains that have formed from volcanic eruptions are unique in their own right. They can take different shapes depending on their type, level of activity and when their last eruption was, though all are formed by magma rising to the Earth's crust. Larger cinder cone volcanos may only erupt once, spurting lava and pyroclastic material into the air. Conversely, lower lying shield volcanoes may continue to erupt on a regular basis for over 100,000 years.

While it may be tempting for some to build a culture centered around an active volcano, there are few human cultures that have actually done so, one possible example being the natives of Hawaii, and certainly none around volcanos that erupt violently on a regular basis. More often civilizations tend to spring up around inactive volcanos that have erupted in the past and may erupt again in the future due to the fact that volcanic ash in the soil is conducive to agriculture. It is these conditions that led to the founding of the city of Pompeii at the foot of Mount Vesuvius.

People found inhabiting mountain regions often develop unique adaptations to aid in their survival. According to recent research, due to the lower oxygen content found at higher altitudes, the native Sherpa people of Nepal have developed a unique metabolism to more efficiently use oxygen and have thinner blood with a lower hemoglobin count that puts less strain on the heart. Such individuals will be more capable than lowlanders at dealing with hypoxic conditions. Because of the difficulties in farming both due to available space and the environmental conditions, large scale agriculture is unlikely, though small gardens and foraging are not out of the question.

As for animal husbandry, keeping goats for milk, fur, and meat will be more common than keeping cattle, as a result of goats being better adapted to the environment. Nevertheless, these

factors would ultimately limit the growth of such a civilization due to the inability to mass produce food that can be stockpiled for long periods of time. Smaller, more tribalistic societies with a strong focus familial or clan bonds are likely.

Despite a low population, such a civilization would be able to resist invading civilizations surprisingly well, being better adapted to the environment, and being able to take advantage of the physical obstacles that mountainous regions present to invading armies. Mountain passes provide a significant obstacle to invaders that are easily defended and must be opened for supply lines to be maintained. Defending forces could successfully hold off invaders for months or even years. The weather could also play a role in aiding the defenders as the rapid onset of winter could trap an invading army in a valley, causing them to disband or even starve like the Donner party.

Some strong, real-world analogues are the cultures of Tibet and Northern India as well as the natives of the Andes mountains in Western South America such as the Incan Empire and their descendants.

On the fictional side, one of my favorite examples of a mountain dwelling culture is the Mountain Clans of the Vale of Arryn, from the fantasy epic *A Song of Ice and Fire* by George R. R. Martin, which has since been converted into the popular television show *Game of Thrones*. The fierce mountain clans long resisted conquest by invaders before finally falling to organized armies arriving from across the sea. Even still, many members of this proud people refused to submit and maintained their own separate society well into the events of the series. An egalitarian society that believes the opinion of all members matters in decision making, the tribes sustained themselves by raiding and preying upon travelers along the mountain roads. They do not trust, but hardly fear the lords in the lowlands that look upon them as savages. Their fierce reputation has led to them acting as mercenaries in other parts of the continent.

This information is intended for those creating a human, or humanoid civilization on an Earth-like planet, but that does not prohibit it from being a good stepping stone for creating something far more unique. Whether you are creating a civilization inspired by something on Earth or something no one has seen before, I hope you consider the endless possibilities of creating a civilization that dwells among the peaks. 🏔️

INTERACTIONS BETWEEN MULTIPLE SPECIES

by xNine90

The Mind has led to many gifts: science, technology, art, culture, traditions, religion, and so on. This 'Mind' as we know it comprises of consciousness, perception, thinking, judgment, reasoning, thought, imagination, memory, recognition, emotions, and feelings. These contribute towards what can be described as, and will be referred to as, sentient species.

On Earth, only one sentient species exists which is capable of technological, scientific, and artistic achievements. That is us, human beings. Fictional worlds, however, do not have these limitations. Many worlds we have created contain many sentient species living on the same planet or in the same solar system.

When multiple sentient species exist on a planet, their interactions can become extremely complex. While humans have a somewhat basic relationship with nature and other creatures, other species with sentience will interact in a much more complicated manner with each other.

These complicated interactions include: cooperation, competition, politics, warfare, and social hierarchical interactions. How species interact will depend on what the species hold as beliefs, as ideologies, as rules, and more.

Any sentient species that is trigger happy will not cooperate, and any species that is peaceful will not go to war. Nevertheless, it is nearly impossible for species to have a fixed thought process. Just take a look at humans; we interact in aggressive, defensive, and cooperative manners. We wage wars and also help others. We cry as much as we cause suffering.

That is just inside one species. Imagine what would happen if two species with entirely different biological and philosophical backgrounds live on the same planet. Will they coexist peacefully? Will they instantly go to war the moment they see each other? Will there be balance? That is for you to decide, and for you to make us believe.

The mindset of a species will often be perpetuated by exposure to certain ideas during what we may consider childhood. During childhood, a creature does not have complex grasp of concepts and therefore acts as their parents do. Whether the parents are hostile towards other species or not, it affects the younglings.

Religion can turn even most peaceful people into extremely defensive people. Religion can and is often responsible for bringing out the more extremist side of a person. On the other end of this spectrum is religious harmony. A religion that focuses on peace and true cooperation will instill feelings of peace and friendship in its constituents, meaning that the followers of such a religion would never spill blood or wage wars.

Again, the problem is caused by xenophobic religious species. If the species with such harmful beliefs (let's call them Xylan) interact with species with peaceful religion (let's call them Yuvan) then only war and genocide can spring forth.

Xylans have been indoctrinated since a young age to hate species that are different. There is no way Xylan would just drop their weapons when they see how peaceful the Yuvan are. Quite the opposite, I can guarantee that they'll be paranoid. The Xylan generals will think they can clearly see a conspiracy brewing in the eyes of the Yuvan when no such conspiracy exists.

This is just talking about religion, given that religion IS the most influential element, culturally speaking. Biological, philosophical and theological differences can also cause rifts, sometimes even surpassing those of religion. More and more complex behaviors emerge when species with different ideologies interact with each other.

Biological differences in our worlds include genetics mostly but in a fictional world, more and more elements can be considered different, like mental capabilities and source of food etcetera. This sets a stage for concepts of civil war and slavery in your world. By presenting biological

differences, whether they are as simple as skin tone or hair color or as complex as differing organs and sexual orientation, the world becomes more dynamic and interactive.

The same can be said for philosophical and theological differences. Biology, philosophy and religion are not the only factors contributing to a divisive interaction. Economic situations and resource-based advantages also provide material to set the stage for offensive, defensive, or cooperative interaction between species.

This lends complexity to your world. One thing can be said about stories, the more components they have and the more complex the components, the more stories can emerge from a single element. Therefore, the history of your world, its lore, and its sociopolitical path, can be extremely interesting and complex if you look for complexities in the interactions between your species.

There is no use pretending that they wouldn't interact. If multiple species live in the same planet, or even the same solar system, they are bound to interact. There is no way the species won't come across each other. Thus, it is better to factor these interactions into everything your world can offer.

As the species interact, economic and social advantages, like trade and rare resources or political and educational cooperation, start weighing in, not to mention moral and rights activists. This often leads to positive interaction between two species with no common factors.

If one species has a special piece of technology then it is a given that at some point they will have to share it other species or destroy them with it. This can be done for both economical and political reasons. How YOU choose to present this is the main thing.

In the article, I have discussed the warfare side mostly, but more interactions exist. Some more possibilities for complex interactions include cooperation, competition, warfare, politics, social interactions, trade, cultural sharing and more.

In closing, I would like to state that all the differences that two species have don't always push them away but sometimes bring them together. Just look at humans; many 'good' bacteria live on our bodies, and we benefit from them even though they have much different biology and aren't even sentient. Just imagine, what can two biologically, scientifically, culturally and artistically species that work together bring to the table and even achieve in their alliance?



WORLDUILDER’S GUIDE TO CONLANGING: INTRODUCTION

by Alex L.

So you’ve managed to come up with a new, convincing character, or you sank hours and hours into crafting a beautiful seaside city, but now comes the part that so many find to be one of the hardest parts of worldbuilding: naming them. Many of us worldbuilders, myself included, are simply stopped in our tracks whenever it comes to naming someone or something. One solution makes this quite a bit easier to deal with: naming languages.

What is a naming language? A naming language is a type of constructed language, or conlang, but is simply limited to common root words and very basic grammar. In a sense, they are like prototypes for full scale languages; a naming language is a very good starting point for further development should you decide to go that route. This article will detail the steps in starting a naming language and will act as the beginning of a series on constructed languages. In this series, we will progressively grow the language we start here.

The first step in designing this naming language will be choosing the sounds that it uses. We will note these sounds using the International Phonetic Alphabet (IPA), which are symbols (most are simple variations or the same as regular Latin characters) used to mark the place and manner of articulation that a sound uses. Broadly speaking, the place of articulation refers to where in the mouth a sound occurs, whether it be the upper lip or as far back as the uvula. The manner of articulation refers to the type of closure in the mouth that produces a particular sound. There are full closures (stops), semi-closures (fricatives), up to vowels which lack any closure. Both place and manner of articulation are a bit more nuanced than what I’ve described, but that is beyond the scope of this article.

The sounds in our language will be organized into vowels and consonants and each set will be placed in charts that mimic the IPA charts found in numerous places. We will start with consonants:

THE INTERNATIONAL PHONETIC ALPHABET (2005)

CONSONANTS (PULMONIC)

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Epi-glottal	Glottal
Nasal	m	ɱ	n			ɳ	ɲ	ŋ	ɴ			
Plosive	p b	ɸ β	t d			ʈ ɖ	c ɟ	k ɡ	q ɢ			
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	ħ ʕ	h ɦ
Approximant		ʋ	ɹ			ɻ	j	ɰ				
Trill	ʙ		r						ʀ			
Tap, Flap		ɹ̥	ɾ			ɽ						
Lateral fricative			ɬ ɮ			ɭ	ʎ	ɮ				
Lateral approximant			l			ɭ	ʎ	ɮ				
Lateral flap			ɭ			ɭ						

Where symbols appear in pairs, the one to the right represents a modally voiced consonant, except for murmured ɦ. Shaded areas denote articulations judged to be impossible. Light grey letters are unofficial extensions of the IPA.

When choosing your consonants, it's important not to go overboard choosing practically everything that remotely sounds nice to you. At the same time it's important not to be overly minimalistic; a minimalistic conlang (minlang) will present extra challenges that may cause you problems later.

Both consonants and vowels tend to be balanced. For consonants, a balanced set will usually involve having multiple sounds from either a manner of articulation or place of articulations. That is: having multiple fricatives or having multiple retroflex consonants. It's possible for these to overlap, but the converse of having a single consonant representing both manner and place of articulation (such as having a uvular trill without any other trills or uvular consonants) is less common.

In an effort to keep things relatively simple and straightforward, I will choose the following set of consonants:

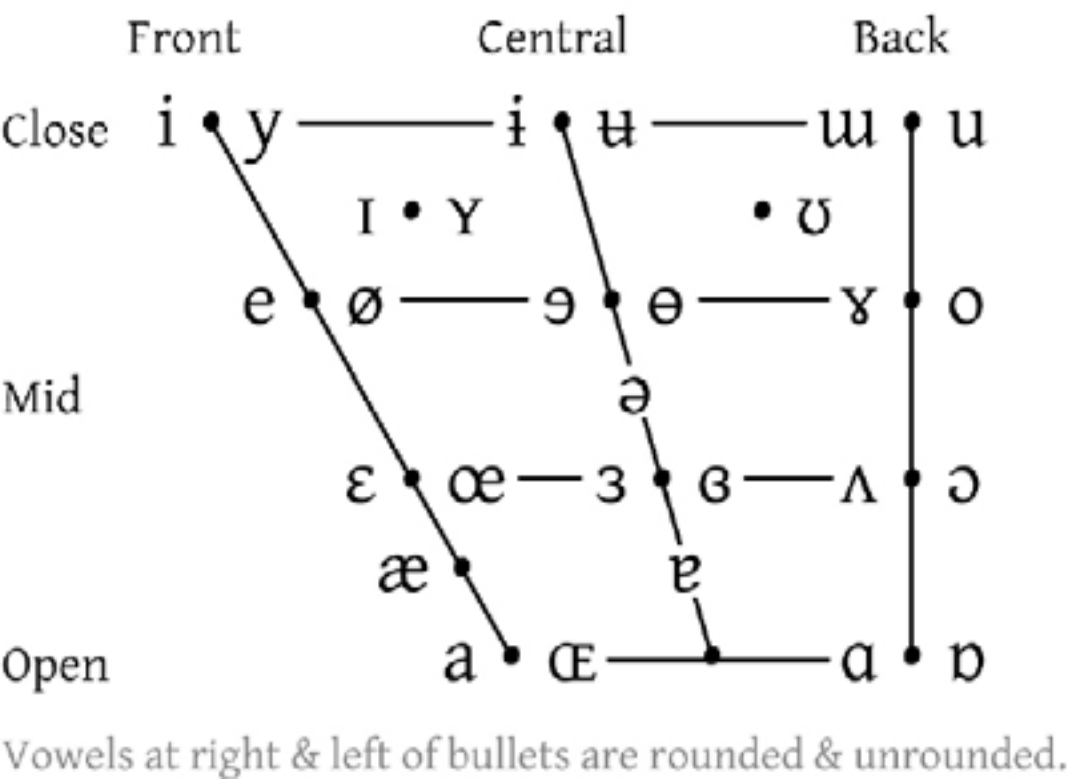
	Bilabial	(Post-)Alveolar	Velar	Labio-Velar
Nasal	m	n	ŋ	
Plosive	p b	t d	k g	
Fricative	ɸ β	s z ʃ	x	
Tap		r		
Approximant		l		w

DEFINITIONS

- Bilabial:** a consonant articulated with both lips. In the case of /ɸ β/, these are like /f v/, but with air forced between both lips instead of between the lower lip and upper set of teeth.
- (Post-)Alveolar:** a consonant articulated with the tongue at or near the alveolar ridge, which is the ridge right behind the upper set of teeth. A postalveolar consonant is similar to an alveolar consonant, but with the tongue at the back of the alveolar ridge.
- Velar:** a consonant articulated with the back part of the tongue against the soft palate.
- Labio-Velar:** a consonant that is articulated both at the velum (soft palate) and lips.
- Nasal:** usually a consonant that has air freely escape through the nose rather than the mouth.
- Plosive:** also known as a stop. A consonant where airflow is ceased.
- Fricative:** a consonant produced by forcing air through two articulators (lips, teeth, tongue, etc.) that are close together, but not so close as to block all airflow.
- Tap:** a single contraction of muscles that throw an articulator (such as the tongue) against another. These can be likened to a very brief stop consonant.
- Approximant:** a consonant produced by two approaching articulators, but not closely enough to produce a fricative, nor far enough to produce a vowel.

Note that the choice of sounds for your language can be largely arbitrary. When I say arbitrary, I mean that you're more than free to openly choose which sounds to include from the beginning and then make refinements or changes as you proceed.

VOWELS



DEFINITIONS

- Front vowel:** a vowel produced with the tongue positioned as far forward in the mouth as possible.
 - Back vowel:** a vowel produced with the tongue positioned as far back in the mouth as possible.
 - Close vowel:** a vowel produced with the tongue positioned as close the roof of the mouth as possible.
 - Open vowel:** a vowel produced with the tongue as far from the roof of the mouth as possible.
- For all of these, the tongue is positioned so that airflow is not constricted in a way that would produce a consonant.

Like consonants, vowels also tend to be balanced in any particular language. In other words, you would be hard pressed to find a language with only the vowels {u, o, ɔ, ɒ} as they are all back vowels and have nothing to balance with that is pronounced further forward in the mouth. So in this sense we will choose a pretty common vowel system consisting of {i, u, e, o, a}. If you are wondering what the difference in rounded and unrounded vowels, the distinction is usually easy to make. Rounded vowels are pronounced with rounded lips and unrounded vowels are not.

TIP: Not all vowels are easy to tell apart, as they may be absent in your language or may have merged with one or more other vowels in your dialect. In these cases it will simply take practice to pick up their differences.

Here is a quick example of how the sounds I’ve chosen might sound. For better examples, I recommend using the resources at the end of the article.

IPA	Example	Notes
i	bee	
u	boot	
e	face	/e/ is similar to this vowel but with less mouth movement
o	boat	Like above, similar but with less mouth movement
a	off	Not quite the same vowel, but closest English approximation
m	mango	
n	now	
ŋ	sing	
p	power	
b	best	
t	tower	
d	desk	
k	cap	
g	grow	
ɸ	full	Similar to f but make friction between both lips rather than with your teeth and lower lip
β	very	Similar to v, same as above
s	snake	
z	zoo	
ʃ	shark	
x	loch	This is similar to making the sound of clearing your throat, but not as far back; the sound happens in the same place that /k/ does
r	butter	May have to try multiple times saying this really quickly; basically a single Spanish 'rolled r'
l	lamp	
w	water	

Now that we have the sounds of our language, we need to determine a few rules that govern how they work together to form syllables. These rules are known as the phonotactics of the language. Let’s keep it simple: we’ll have our syllables follow the pattern (C)V(C) which means an optional consonant followed by a required vowel and ending with an optional consonant. This means the simplest syllable we can have is a single vowel and the most complex syllable is a consonant, vowel, and consonant together.

To spice things up, we can add a couple of rules governing our onsets (beginning of syllable) and codas (end of syllable). Let’s say that syllables cannot begin with {ŋ, x} and syllables cannot end with {r, w}. As mentioned before, this choice is usually arbitrary; I tend to make some of these decisions

based on my ability to pronounce certain sounds in different locations of a syllable.

Before we move on to making some simple grammar rules, we need to figure out how to write our sounds down. We could design our own set of characters for each sound or possible syllables, but we won’t worry about any of that for now. Instead we’ll just use the Latin alphabet. In our case, we can use most of the IPA symbols as they are. We only need to consider a few phonemes (sounds): {ŋ, ɸ, β, ʃ, r}. For these we will use <ng, f, v, sh, r> respectively.

The grammar rules for a naming language can be very simple, or they can be more complex if you want to lay the groundwork for later development into a full language. For this issue, we’ll continue to keep it simple. Let’s say that both adjectives and adverbs follow what they modify. For a naming language, that’s nearly all you need! But we can add a few more things to keep it interesting. We’ll also say that nouns don’t inflect (change) for number but articles do (the two cats vs the-s two cat). For the heck of it, let’s also say that there is only a definite article, but no indefinite article (so no “a” but still having “the”).

Now with all of that out of the way, we can start coming up with some words to create. You can either choose to make random syllables that sound good to you and work with your phonotactics, or you can potentially use a word generator specifically made to work with conlangs.

TIP: When making words, try to avoid making too many single syllable words. While some languages tend to have common words that are relatively short, too many single syllable words may lead to difficulties down the road. This is semi-dependent on the syllable structure you choose (as that determines the number of possible syllables).

For now, just to get your feet wet, you can just start making words as they come to you or as you need them. The next article in this series will go into more detail about building up a lexicon and some other fun phonological features that can be implemented into your language.

As an example, using what I’ve covered in this article, I came up with the following words:

Word	IPA	Definition
razung	/ra.zuŋ/	Red
walnux	/wal.nux/	Fort, brick building
meshi	/me.fi/	Fast, light, agile
vukog	/vu.kog/	Soldier
mefox	/me.fox/	Commoner, peasant; poor
zatsun	/zat.sun/	Brave, undefeatable
wegi	/we.gi/	Large, a lot (of)
vosax	/βo.sax/	City, citizen
larum	/la.rum/	Sea, salty lake
bakkumeshi	/bak.ku.me.fi/	“Fast Peak”, midpoint, middle

Okay, now what? Well, let’s suppose we have a fort that was built using red clay bricks. We could rack our brains for a while to come up with something, or we could call it *Walnux Razung* or Red Fort, which is something that real cultures do when naming things. As you can see, once we have a set of root words, even if only a few, we can start naming things descriptively and still have exotic sounding names that can fit more cohesively with our worldbuilding projects. A few more examples: *vosax larum*, “sea city” or “seaside city”; *vukog zatsun*, “brave soldier”; or maybe a character’s first name “Zatsu”, derived from *zatsun* by their parents.

As we continue, it will quickly become clear that the sky’s the limit when it comes to developing a language whether it’s a simple naming language or a full blown conlang. If you’re wondering about what’s going on with *bakkumeshi*, stay tuned for the next issue where we’ll cover lexicon building, including compound words. As promised, here are some invaluable resources.

Further Resources:

- [/r/conlangs](#)
- Wikipedia: [Vowel](#) & [Consonant](#)
- [IPA Charts](#) (requires Flash)
- [Glossika Phonics](#) (YouTube channel)
- Zompist.com: [Vocabulary Generator](#) & [The Language Construction Kit](#)

ON EVIL, ANTAGONISM, AND CONFLICT

by Dheolos

I would like to start this article by breaking worlds into two categories, based on how your antagonists are perceived. The first category is for “subjective evil,” or antagonists that have their own motives, and are only considered evil because your protagonist sees them that way. The second category, “objective evil,” is when the antagonists have no motives, no philosophy, no justification, but do what they do for no reason other than destruction. This categorisation only works very superficially, and only for very poor worldbuilding, because objective evil as it is defined here does not exist in good worldbuilding. Every villain, every antagonist, every criminal has a motive. Even in my attempt to find a case study of objective evil for this article, I am unable, because evil without any motive whatsoever is just so shallow and superficial.

All villains, antagonists, and adversaries have a motive, a philosophy, an ideology, and an endgame. This holds true regardless of who (or more importantly, what) the antagonist is, whether it be an individual, a god, a country, a corporation, or something else. Their motives are the reason why they are seen as an adversary/villain/antagonist by your hero. Their philosophy is their way of thinking, usually inspired to some extent by their motive. Their ideology, if they’re political, is a set of policies with the objective of implementing their philosophy, and if they’re not political, is a set of values they hold. Their end game is what they see as the ideal world.

Your villain sees themselves as the good guy. They genuinely believe their cause is righteous. Usually, the only reason they’re seen as evil is because the protagonist sees them this way. Third parties involved in the conflict, such as the general public, may very well be divided on who they think to be right. Perhaps the baker likes the mafia be-

cause they keep his store safe from petty criminals. Perhaps a small, benevolent city-state aligns itself with the evil empire because of some free trade deal or the like.

There will, of course, be third parties; your world won’t be limited to just the protagonist and antagonist. Choosing where the various other characters, extras, and so forth stand on the conflict should be a well thought out decision. People have their reasons for where they stand. And don’t assume that it’s a binary conflict, or that there are

Credit: Janina Joves



only two sides to the story. There could be as many different factions as you want, and they could be aligned with or against each other in whatever combination, as long as each has a reason for doing so.

However, even though all evil has its own point of view, that doesn't necessarily mean their point of view should be respected. Some antagonists can most definitely be considered evil beyond discussion because of their actions or the values they hold. Let us then shift the definition of objective evil to include antagonists whose values (motive, philosophy, ideology, and endgame) are so universally reviled that they might not even be considered valid. Such antagonists could include Sauron, who is universally seen as evil despite him having his own point of view, or the Nazis, whose principles and actions put them well outside the realm of justification and subjectivity.

Having resolved that just because all evil has their own justification and considers their cause to be righteous does not mean that they could be considered morally subjective, we can now offer a better definition of subjective versus objective evil; the former exists in a moral grey zone, while the latter does not. The argument could be feasibly made that a subjective evil is in fact righteous, while arguing on behalf of objective evil would be fruitless, baseless, or even distasteful.

With this new, revised definition in place, a proper analysis can be carried out over the use of objective versus subjective evil in worldbuilding.

Subjective evil will raise questions about morality: who's right? In a world with subjective evil, the choice may largely be up to the audience over who they feel to be justified. Even if a clear protagonist is chosen by the author, the audience may find themselves sympathising with or even agreeing with the antagonist. Sometimes this will be by accident, or sometimes the author will put in details to hint at antagonist sympathy. Perhaps you could go so far as having the protagonists be the bad guys; this is not as uncommon as you'd think. Many movies feature criminals, thieves, and gangsters as the protagonists. In worlds where there are multiple protagonists, such as in *Game of Thrones*, it's up to the audience to align themselves with whichever character or faction they want, cheering on that side in combat, and lamenting when that side loses

or dies. If the evil in your world is subjective, be prepared to raise and address moral issues in your worldbuilding.

If the evil in your world is objective, questions of morality may not be the primary themes, instead you will need to find something else to bring intricacy and intrigue into your world. For example, you could focus on internal conflict within the protagonist. If the protagonist is an individual, perhaps he or she is dealing with responsibility that he or she cannot quite handle. If your protagonist is a country, it could be dealing with a crippling problem such as dire poverty or civil unrest. If your protagonist is a corporation, maybe it's struggling to remain profitable. Or, you could also make your world about a different subject altogether. If you're a military enthusiast, perhaps the driving theme of your world is military tactics and wartime resource management. If your protagonist is losing the struggle, the theme could largely be about the dark mood of hopelessness or pessimism.

It depends on your audience as well. If your worldbuilding is an end in itself, then your audience may just be you, the creator, in which case, build a world that you enjoy. If you intend on writing a children's book, then likely your audience won't be interested by questions of morality, and objective evil is the way to go. If you're intending on creating a game with many playable factions, you'll need to be able to see the conflict from each faction's point of view, in which case subjective evil is probably the way to go.

For a conflict to be believable and fascinating, there must be thought put into both sides. All evil has a reason, and neglecting to give your antagonist a justification is simply poor worldbuilding. But that doesn't mean your antagonist's reason should be valid or acceptable. The core of what makes a world interesting is conflict; planets exploding and cities being sacked can only interest an audience for so long, eventually they're going to need to be intellectually challenged. The best, most intriguing and most interesting conflict must ask implied questions, and get your audience thinking.



THE FUTURE IS HOW?

Jason DiBlasi

The Third Step: Society (Part 1)

When last we met, I went into a few ways to build a leading force for your people. These next few months will feature articles that are all about different cultures that you can create. While writing last month's article, I ran into a bit of a hitch. I wanted to speak of Utopias and Dystopias, but I couldn't fit them very nicely and they didn't flow well. This month, we are going to take a look at both of these forms of society and how you can play around with them.

Utopia

It's a pretty easy thing to understand. The world is perfect and everybody is happy. All needs are catered to and nothing is wasted. Typically everybody is equal to an extent, where people who maintain the utopia have more power and the working class of the Utopia understand why they have less power. It is up to you to figure out how the utopia came about. Did technology reach a point where people no longer had needs to be filled? Was there a fundamental change in how people perceive the world that brought a change in attitudes? What if your civilization forced this utopia on itself, where they created planned communities that integrated various cultures which reached some form of peace?

While there are quite a few ways this utopia can come to be, some things are certain for all utopias. For example, economic prosperity is present and prevalent — People may not be shopping for the most extravagant luxury, but they can afford to be comfortable and stretch past their means once in awhile. Nature is preserved or appears to be preserved through other means. Space faring races may have artificial plants or machines that replicate the effect of plants. Life is considered an indisputable and incredible right. Murder and harm are nonexistent. Even food production is done as humanely as possible or the civilization synthesizes foods that cover their actual nutritional needs. Religion is either not practiced at all or respected. While it may seem that having all different religions could lead to problems, each individual recognizes the rights of the others and they recognize the significance of scripture, even if it is not their

own. In a typical utopia, there is no apparent need for social justice or even a legal system.

Dystopia

The other side of the coin, the yin to our previously mentioned yang, our most overused trope for young adult fiction, the Dystopia is a well known trope for a good reason. It's easy. Easy alone is not the reason it's popular; it's also engrossing and addicting. People are naturally drawn to the misery of others, even if the others don't actually exist. Dystopias can be characterized by heavy destruction of nature, where the land is yielded to the means of production. The citizens and producers are also rated as second class to the leading party, if they're even given a class at all. Totalitarian governments run the show, or there might not be a government at all. Anarchy may reign supreme.

How does a dystopia form? An apocalyptic event could have allowed the ruling bodies to take advantage of the populace. The government could have called for a sort of martial law and never rescinded it, which allowed them to gain more and more power until the citizens were numbers, not names. A war between nations could have left one in ruins and another in poverty, where extreme measures had to be taken for the survivors to, well, survive. What if your Utopia had a weakness that some terrorist from a different land managed to take advantage of and bring it to its knees?

A Complex Relationship

A utopia for some can be a dystopia for others, and vice versa. Let's look at a fantastic example of this, the novel *The Giver*, by Lois Lowry. Most readers of this magazine have either read it as part of a grade school curriculum or heard of it because of the movie adaptation released in 2014. To recap, a society is controlled through drugs to not feel emotion or experience fine detail such as color and taste. This society is a utopia for all who live there; they are emotionless, but don't realize it. They have every need catered to and they are all essentially equal. An outsider would clearly see this as a dystopia. People controlled like that have


no free will. People controlled like that are also not miserable and can be considered content. The novel is actually presented as a dystopian novel, however, we do not live the life they did, how they did, so we see it through the lens of people who live in neither, and we view it emotionally instead of objectively. The world has peace, the people are tightly controlled, but it is their utopia.

One of my favorite examples is the new Mad Max movie. It's clearly a dystopia. The land is ruined, the people haggard and sick, and they are ruled by a man with an iron fist. However, look at how happy these average people actually are. To them, they are living the life. Their ruler is a god amongst mere mortals, they are happy with the smallest scraps, and they have all of the most basic needs catered to, even if it isn't up to our standards of living. They feel that they live in a utopia, which the main characters clearly see is not the case. We view their world through the lens that we have experienced in our world, when we should try to see it through the typical civilians' eyes.

Play around with the feel of your world a bit. Next month, I'll tell you the approach I like to take when I throw in actual civilians.🐼







Humans exploring a field of *Aerophyta* on

POSTANTERA

by The Worldbuilding Monthly Collab Team

POSTANTERA

by The Worldbuilding Monthly Collab Team

Intro Piece (The Earthshakers):

II.

*The fear of Death
Follows from the fear of Life.
A man who lives fully
Is prepared to die at any time
- Mark Twain*



“GET DOWN.”

An electric shock sent James sliding through the cold underbrush, until he came to a sudden stop before a tree. The blood seeping through his arm sleeve painted the green leaves red. He grunted as he pulled his rifle towards him by its torn strap and checked the clip. The entire forest was humming with the beasts’ deep frequencies, unexpectedly rising to disturbing shrieks as they lashed out their tails, crippling even the strongest of the scouts. These beasts were akin to armored worms, with the sudden movement of snakes, and the violence of a starved wolf, and James knew exactly what they were capable of. A few weeks ago, contact with one of the scout parties went cold, and a crew was sent to investigate. Upon arrival, James and his men found what looked like upturned graves, as the beasts travelled underground at great speeds, sensing movement and direction using deep frequencies, before breaking through the surface and using unnatural shrieks to stun prey before the fatal attack. Despite never laying an eye on one, he knew what to listen for to hunt them down.

James pulled himself to his feet, scanning the surroundings. The overgrown forest concealed almost everything beyond a three meter radius before him. He held his breath, listening and feeling the deep vibrations produced by the unseen horrors. All that answered was silence. He pushed through the growth, wincing as the thorny flora tore at his clothing and bore into his exposed arm. When he reached the clearing where his party was first ambushed, he held his breath again.

Still silence.

Nothing from the beasts.

Nothing from his men.

As James was about to call out, he felt the dangerous low rumble. However, this one was different, and the realization terrified him; the beasts were hunting in pairs. As the rumble grew closer, he readied himself for the worst. As the ground parted below him, James dove forward, turned, and sprayed a round of bullets behind him. A shriek broke out as the spiked tail sprayed dark blood before disappearing beneath the ground again. James stumbled to his feet, only to fall back to his knees as a second shriek tore through the forest air. He grabbed at the tree next to him, finding a branch to pull himself up by. He had no time to regain his senses and thus blindly sprinted towards the origin of the second shriek about thirty paces in front of him, unloading the clip into the ground as he ran. He felt the deep frequencies growing behind and before him, both drawn towards their prey. The rocks and branches on the forest floor began to shake as if in terror as the beasts closed in. As the last shot penetrated the earth, James dove to the side. Behind him, the two beasts erupted from the earth and collided, sending dirt, branches, and rocks in all directions much like an explosive. James clawed at the earth, pulling himself behind a tree as debris whistled by. The shrieks were earth shattering, but they quickly subsided as the two large bodies thumped against the cold forest floor.

Panting, James held his breath once more; this time he heard the cries of victory from his men in the distance.

Evolutionary Tree:

Life on Postantera began much like life on Earth did, as single cells in the oceans. Nowadays, however, Postanti life is quite different from Earth life. Due to how recently life evolved, much of it is still stuck in the ocean. There is very little biodiversity on land, and much of it is closely tied to water.

There are ten major phyla native to Postantera: five in the animal-like kingdom *Creatura*, and five in the plant-like kingdom *Plantera*.

Starting things off is the simplest animal-like phylum: *Funganthozoa*. More commonly known as coral-fungus, members of this phylum have properties of both of their namesakes. They are stationary, sprouting from the seafloor and creating a thin exoskeleton made of calcium carbonate. The “head” of the animal stays mostly unprotected, as it is used to filter plankton from the seawater. Different species can look radically different, and they form varied reefs that are home to a wide variety of species. They grow much faster than coral, and must be broken and eaten by other wildlife to keep their numbers in check.

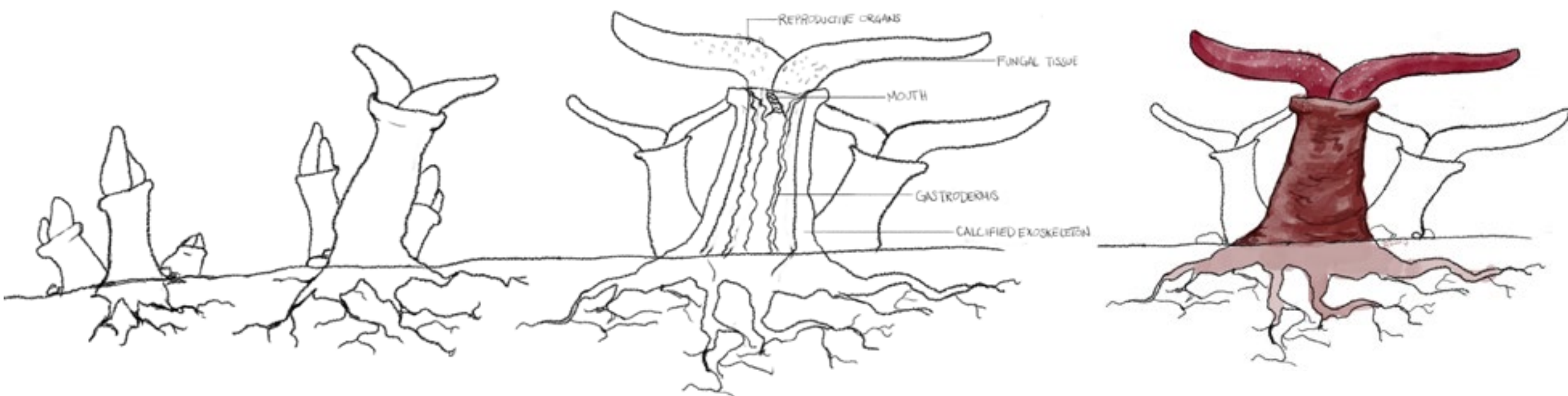
Next is the phylum *Vasvermisia*. These tubular creatures resemble worms and sea cucumbers. The most successful are those in the class *Polyglossa*, who use their many tongues to grab and eat prey. This phylum is quite varied; there are free swimming species, burrowing species, large and small species, and everything in between.

The phylum *Gastrodermata* contains species that use external digestion - excreting digestive juices through their skin and absorbing nutrients. Members of this phylum lack a brain - they instead have neurons throughout their bodies. The majority also lack a true front or behind, with both ends

looking identical. This phylum includes the infamous Dravovasts, as well as many species of gut parasites.

Like its name suggests, creatures in the phylum *Pseudoarthropoda* superficially resemble arthropods. This phylum has the largest number of species. Like their namesakes, pseudoarthropods have segmented bodies and exoskeletons. Unlike Earth arthropods, they have complex eyes that are similar to those of vertebrates, and tend to have fewer legs. There are two major classes of pseudoarthropods: *Pneumatica* and *Pennapoda*. *Pneumatica*, or pneumatisects, are named after their unique ability to compress and store air within their abdomens. They are similar in appearance to insects, but have only four legs. They make up the majority of land creatures on Postantera. *Pennapoda* are named for their legs, which have feathery ends. They are exclusively aquatic, and resemble centipedes.

The last major phylum in *Creatura* is *Neochordata*. Creatures in this phylum have internal skeletons, much like the ones that Earth vertebrates have. The most obvious difference between neochordates and Earth vertebrates is that neochordates have compound eyes and a mouth split in three or four mandibles. They lack jaws, instead solely using muscles in their mouths. It is believed that the common ancestor of all neochordates had three eyes and mandibles. The two major classes of neochordates are *Dodecapoda* and *Triocula*. Dodecapods are twelve-legged aquatic creatures with four mandibles, two eyes, and long, flat tails. They are often very large and high on the food chain. *Triocula*, or amphibianoids, have three-way mouths and three eyes, two on the top and one on the bottom. They often live on land, but must stay in moist areas like Earth amphibians. Some species have re-adapted for life in the ocean, like whales have on Earth.



A *Funganthozoa*'s lifecycle.

Starting off the *Plantera* kingdom is the phylum *Platellaphyta*. Members of this phylum are very primitive, generally consisting of a single flat surface. Many species are free floating, but some are rooted to the seafloor. All species are aquatic.

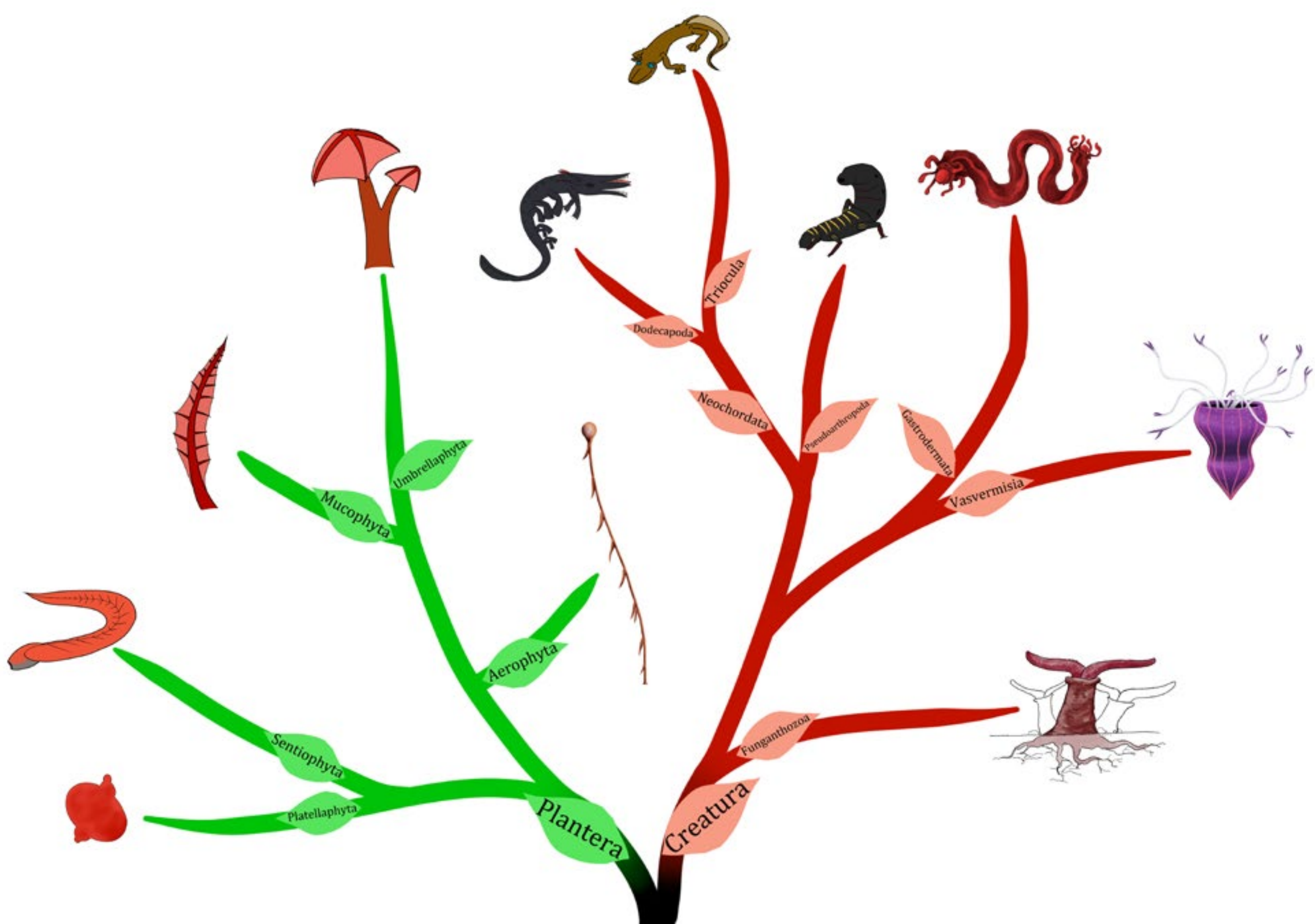
The phylum *Sentiophyta* is quite interesting in that they have many animal-like traits. Their bodies contain muscle and they are able to move freely through the water. While they still subsist mainly using photosynthesis, some larger species are also filter feeders. Despite this, they lack any complex sensory organs and rely on a sense of touch to navigate.

The phylum *Aerophyta* contains species that have a balloon-like organ. This organ is filled with

hydrogen and enables them to grow incredibly tall. Some species can migrate by losing their roots and drifting in the wind.

Members of the phylum *Mucophyta* are aquatic and produce slime. Some species have a slimy coating, while others store the slime within their stems to fill the mouths of would-be predators.

The final major phylum in *Plantera* is *Umbrellaphyta*, named after the umbrella shaped leaves of many species. This phylum is arguably the most advanced, as some species have evolved flowers and fruit. Most Postanti flora that is edible to humans comes from this phylum.



Postantera's evolutionary tree.

Dueling Ecologies:

The planet of Postantera has been under attack since the very day the SFFS Provenance crash landed in the Starfall Mountains. The relatively young ecologies of Postantera had never before seen the likes of what the colonists brought with them--pieces of Earth. They brought not just the memories of the planet they once knew, but the tangible, living plants and animals they needed to survive in this new world. On board the ship there were the embryos and seeds of thousands upon thousands of different species to jumpstart Earth 2.0. What the colonists did not think through was the fact that Postantera already had an ecosystem.

Whenever invasive species are introduced to a native ecosystem, havoc ensues. A real world example of this would be the native environment of New Zealand after colonization. Many endemic species of birds quickly became extinct because of outside stresses and introduced predators. The entire ecosystem changed from the bottom up with the introduction of colonial trees and crops, and the ecosystem of present day New Zealand is completely different from pre-contact. Now imagine this havoc on a planetary scale.

Upon arrival, native flora was cleared for human agricultural staples and Postanti creatures like the dracovasts driven away and many killed. Animals bred by the humans for hunting like deer, rabbits, elk, and turkeys multiplied exponentially as they took hold on the new planet.

Due to just how differently the two ecologies evolved, many Postanti plants and animals are unpalatable or downright poisonous to Earth creatures, and vice versa. This made them “useless” in the eyes of the colonizers and only a nuisance that had to be killed. Over many years of killing native fauna, removing Postanti plants, and spreading a little bit of Earth wherever they went, Postantera of today looks nothing like it did just before the human arrived.

Aeternum Spotlight:

Emilia Clausen was one of the twenty-one Aeternums, or immortal humans, aboard the SFFS Provenance as it cleaved its way through the stars to Postantera, and was an important advocate and leader of the Postanti colonization effort. While she did not survive to see the fruits of her labors in a colonized, if disunited, Postantera, her legacy survives in her fiercely loyal followers.

Emilia was born to Anders and Ingrid Clausen, both elite members of the ruling family of Valhalla, a sky colony and capital of the planet Venus. Her early life was shaped by the commercialized, casino-filled city she lived in. She had been tutored privately from a very young age, and had shown a passion for programming, public speaking, and leadership. Her parents pushed her heavily towards the latter two, and by the age of fifteen she had already been put in control of some of her family's gas mining monopolies. Using controversial tactics like lowering pay, aggressive advertising, and effectively banning certain trade unions, she managed to double the profits of her casinos, tourist attractions, and stores within her first year. Emilia expanded her family's trade empire over the next decades, gaining more and more authority as time went on. She built new casinos, gained a monopoly on the garment industry, and pushed out smaller businesses. At one point she even got into a gunfight with an angered, bankrupt storeowner whom she had forcibly evicted. She suffered wounds and was hospitalized, but Aeternums can shake minor injuries off with time. What she never forgot was the bullet she had buried in the man's chest, and the faces of his family as he bled to death in the next room over. She later expressed regret at this period of her life, but her reputation among the working class of Valhalla was permanently stained, while her family couldn't be prouder.

Soon after she turned eighty-two, her father along with several thousand Valhallans perished in a gas leak while he was visiting an atmospheric gas harvesting plant on the outskirts of the city. With his death, the role of Supreme Doge of Venus was conferred upon her for the time being, until a new Doge could be appointed by traditional election. Her first order of business was to hold a state funeral for the deceased. To the surprise of the attendees, who had expected her to use these

deaths as a political tool to become the permanent Doge, she gave a beautiful and apolitical eulogy. She barely even mentioned her unpopular father, and instead delivered a genuine, heartfelt speech honoring the thousands of working people who had tragically died. Millions who watched online throughout the system were brought to tears. The common folk of Venus still remembered the awful things she had done in her corporate life, but she made it clear that her Dogeship would be different, and that she had truly changed her ways.

For four Ventian months, Emilia held the title of Regent Supreme Doge of Venus while a bitter election raged on in the cloud settlements. More than anything she wanted to get away from Venus. Her amazing oratory skills and her wise leadership had led the planet through tough times and done much to soften the people's view of her, but she detested her world. Emilia began dreaming of starting something new, something perfect, far away from the corruption and decadence of Venus that she had grown to hate. Much to the dismay of her extended family, Emilia decided to resign from every corporate position that was granted to her and started exploring options for leaving. Once a new Doge was chosen, she stepped completely out of the public eye.

The Starfleet for United Humanity had a base in Valhalla and started to advertise the Great Exodus and their need for qualified pilots and officers to journey to other star systems. Emilia saw one of these ads on the holographic billboards and immediately went to the base to sign up in person. Amazed and confused, the Starfleet accepted her request to be a leader on any ship of her choice due to her political experience. After several years of training and intense judgement by family members, Emilia chose the SFFS Provenance as her ship of choice because the crew was to be made up of mainly mortals, the company of which she'd begun to prefer over that of her Aeternum peers.

Onboard the SFFS Provenance, Emilia was given the job as second officer, second in command only to Thomas Crane, an Aeternum whom she clashed with often due to his lax sense of morality and his tendency to neglect his duty. After her time in Valhalla, Emilia had had enough of corrupt, lazy leaders. She was assigned sector two of the ship, which had 20,000 mortal humans to start with. These mortals and their descendants would grow to be

her loyalist of followers and stick with her through thick and thin. She spent the majority of her time helping, conversing with, and advising her crew. Emilia made a habit of befriending humans, and when they inevitably died, she would ensure their bodies would be treated with respect. She personally gave eulogies at many of their funerals. Despite her warm feelings towards her people, however, she didn't always act towards their happiness. Even now, millions of miles away from Venus, Valhalla still haunted her. The people she'd trampled to make her fortunes, the people she had bankrupted, the people whose souls had been crushed in her family's slot machines: these people's ghosts still kept her awake into the darkest hours of the ship's artificial night. She would never let such a depraved place exist under her watch again. She forbid her people from drinking, gambling, and sometimes even simple card games.

Emilia never cared much for the other Aeternums, who she felt focused too much on the ship and not enough on its inhabitants. She always attended meetings and important Aeternum events, but left as soon as possible to return to leading her followers. She did as much as her job description required her to do, and would not stop until she had gotten it perfect. Often, she would get into impassioned arguments with other Aeternums when they did something wrong. She was a rigid leader by choice and a perfectionist by nature; if something didn't meet her standards, it was to be thrown out and attempted again, no questions asked. While some other Aeternums admired her leadership and work ethic, only the immortal Joseph Reed, administrator of the ship's various religious communities, ever truly became her friend. Her allegiance was to her followers, and them alone. At times, when Thomas showed a lapse in judgement, she would ignore her rank and try to order even him, her superior, around. This led to many a conflict, and eventually, the civil war that would kill her.

When the SFFS Provenance eventually crashed, Emilia did not hesitate to point out the captain's error. She let out the resentment that had been festering for hundreds of years and delivered the most passionate, angry, and vitriolic argument anyone present had ever heard. Thomas, naturally, was indignant, as were his followers. However, some of the Aeternums had themselves harbored doubts about Thomas, joined Emilia, and it escalated into

a war. Arming their followers with salvaged weapons, the two sides clashed. Thousands of humans and seven Aeternums died in the fighting. Included in those numbers, unfortunately, was Emilia.

During the war, Emilia had continued her disciplinarian yet kind style of leadership. She drilled her soldiers rigorously, but at the same time let them share in the spoils of victory and celebrate whenever they captured something from Thomas's supporters. Over the course of the year, she won many battles, gained followers, commanded Aeternums and humans alike, and made friends and enemies of both. One of the most notable humans to live through the war was Emilia's best friend, Victoria Rubeski. Victoria defected from Thomas in the very beginning of the war, and Emilia personally took her under her command. Using her knowledge of Thomas's strategy and logistics, Victoria helped Emilia fight. The two grew close, and by the end of the war Victoria was Emilia's highest general, ranking higher than even the other Aeternums in her army. After the end of the war, Victoria would go on to lead Emilia's followers in her name. Her motto was "Do what Emilia would have wanted."

Unfortunately, Emilia's eternal life shaped out to be much less eternal than most assumed. After ten long months of fighting, the war was still raging, and both armies were tired. Emilia, not wanting to see her friends and allies die any longer, began to arrange a secret meeting with Thomas through trusted messengers. They met in person on the anniversary of the war's beginning. Before she left to an undisclosed location, she announced the following to her army.

"Friends, soldiers, I leave you today not to win this war, but to end it. I have arranged a meeting with Thomas Crane. Only one of us will come back alive, and it shall be them who wins this war. Neither army is to fight after that, and each Aeternum on the losing side will lead their followers out of the mountains and never return. Do not try to intervene. If Thomas and his soldiers are the ones to deliver the news, then do not question it. Come tomorrow, the war will be over, and not a single one of you must be claimed by its evil grasp. Promise me this, my comrades -- if my blood stains the soil of Postantera today, let it be the last blood spilled on this new world! Let my wound be infected and black so that yours may be bandaged! Let the one

casualty of the final battle of this war be the last casualty! Whatever happens, go forth, my friends, and thrive!”

She had phrased it as though Thomas stood an equal chance of dying that day as her, but in truth she had no intention of that happening. She’d killed before, she would not do it again. That day, the one-year anniversary of the war, Emilia entered a duel to the death with Thomas and lost. Thomas and his bodyguards carried Emilia’s body to her devastated and angry followers the following day, a bullet lodged in her left shoulder. As the casket was lowered into the red Postanti soil that Emilia had waited so long to reach, the crowd wondered who would give the eulogy, now that the greatest speaker on the entire world was dead. To the

booing of the crowd, Thomas himself gave a short speech that day after the long, teary-eyed, passionate one of Victoria Rubeski. It consisted of a description of her death. When they had shaken hands and he had pulled out his gun, Thomas explained, she hadn’t even drawn her weapon. She had stood there, smiled, and told Thomas to hurry up.

Overall, Emilia Clausen had an astounding effect on the future politics and culture of Postantera, even though she died in the beginning of the colonization process. Today she is memorialized as a legendary figure, her name and her sacrifice still being honored by her followers, as loyal to her as she was to them.❧



Credit: HyperD

FANTASTIC BEASTS AND HOW TO MAKE THEM

by Batrouse

So you’ve begun a new world. Maybe all you’ve got is a map, or just an idea, but the one thing that every world needs is animals to give the setting life. This article focuses on creating realistic and semi-realistic creatures and aliens, but these techniques can also be used to create races, plants and other organisms. As an example I will also be making a creature in this article.

Step One: Finding a Niche

A niche is the role an organism takes in its environment. Every animal has a niche that it fills, and all animals have traits that help them perform in their niches. Deciding on a niche before starting on the animal has the advantage of resulting in a more realistic creature, similar but distinct from nature’s own ‘designs’. Always keep the intended niche in mind when creating your creatures, but don’t be afraid to stray from it slightly — animals in real life sometimes have vestigial traits that come from their ancestors.

For our example creature we will make a

tree-dwelling herbivore that lives in temperate forests. There isn’t anything we can do with this right now, but it will be kept in mind during the rest of the creation process.





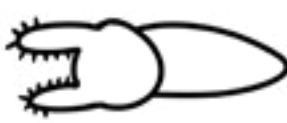



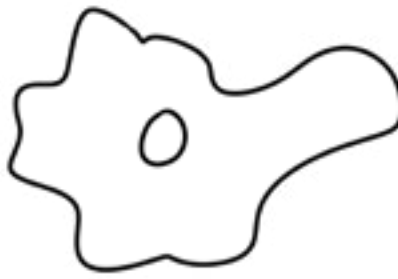

Step Two: Picking a Body Type

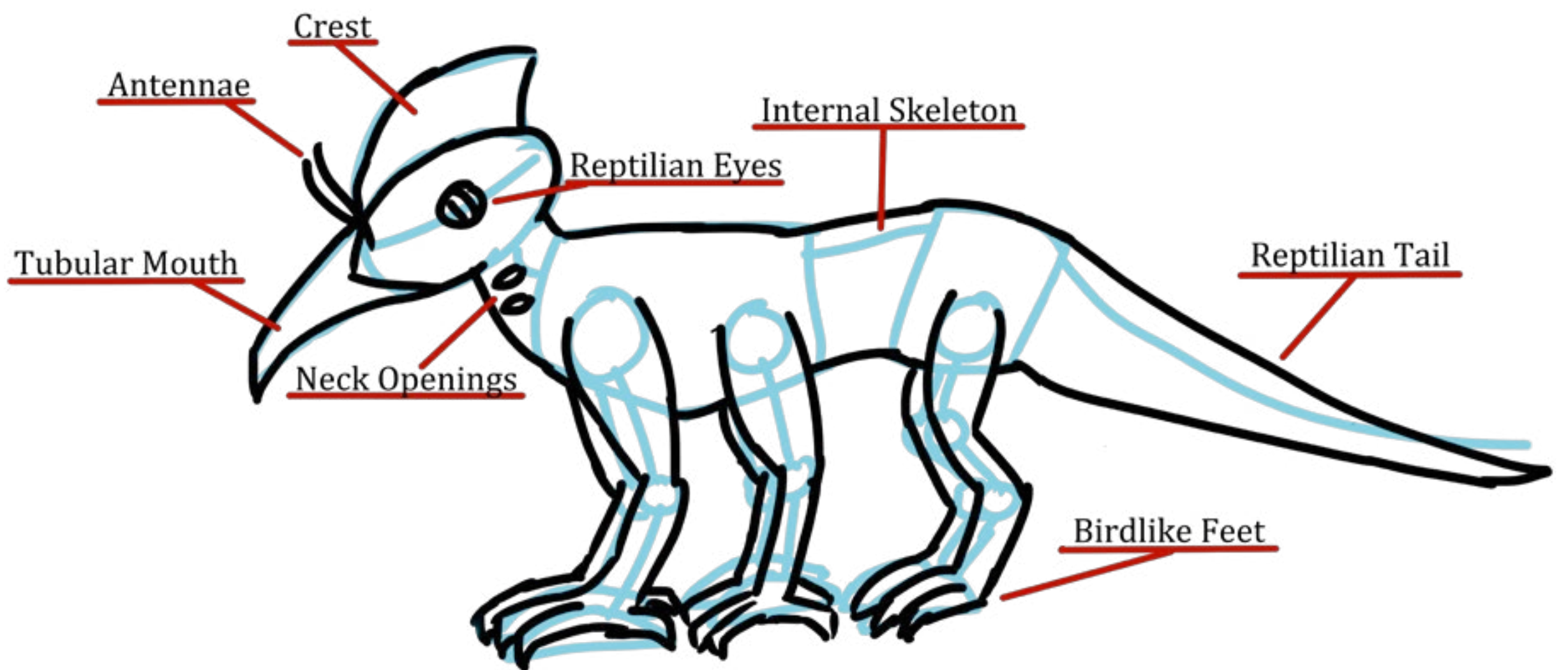
This is the very basic shape of your creature, the framework that will be built upon. Body type and niche are not very dependent on each other, most body types can fit in any niche with a bit of creativity. Pick a body type you like or already have ideas for.

Keep in mind that this is not an exhaustive list of body types, and that a creature’s actual body can vary significantly from the basic body type. Birds, whales, and snakes were all at one time quadrupeds, and all but the birds lost some, or all, of their limbs.

Our example creature will be hexapedal because it is a nice shape – not too alien, but not too familiar either. It is well suited for a land based creature, unlike types such as cnidarian or rotifer.

TIP: Don’t have too many different body types in a single world, it can feel less cohesive. Stick to 5 or fewer for the majority of your creatures as well as a few minor ones.

	Quadruped Lizard Dog		Hexapod Insect Dragon <small>(various fantasy)</small>
	Serpentine Snake Earthworm		Dinocarid Anomalocaris Opabinia
	Rotifer Rotifer		Centipod Centipede Millipede
	Radial Starfish Sea Urchin		Cnidarian Jellyfish Metroid <small>(Metroid series)</small>
	Amorphous Amoeba Slime <small>(various fantasy)</small>		Asymmetric Coral Sea Sponge



Step Three: The Broad Strokes

This is the step that makes a creature your own. Large details about the creature are added, such as the body's actual shape and how it interacts with the world. The niche you decided on at the beginning is now starting to be important; make sure nothing you add in this part contradicts the creature's role in its environment. Don't worry about your creature fitting perfectly into its niche yet – that's in the next step.

A great way to add details to your creatures is to ask yourself questions about it, or to have a friend do so. Having a second or third pair of eyes on your work is the best way to catch things you may have forgot. Ask yourself; does it have eyes? If so, what do they look like? Does it have a skeleton or exoskeleton? How does it breathe?

At this stage it is also a good idea to visualize your creature. A detailed picture isn't necessary, since the creature isn't complete yet, but a simple sketch will do. This can help you see issues with the design, lets you pick traits you like the look of, and can be used as a reference for other creatures you make (more on that later).

Here is a sketch of our example creature. It has an internal skeleton and birdlike feet, reptilian eyes to see with, and antennae that can detect scent and air vibrations. To pierce plants and drink

TIP: If you're having trouble coming up with ideas, take inspiration from real animals, living and extinct. Cambrian life is particularly alien and can be good inspiration for more surreal creatures.

TIP: Research real animals that have similar niches to your creature and find out what adaptations they have for their environments and lifestyles.

their sap it has a hard tubular mouth, while it uses openings on its neck to breathe. It has a long reptilian tail and a crest on its head to make it more interesting. Notice that these traits are not very specific. That is because we are creating a more generic version of our final creature; the final details have yet to be added.

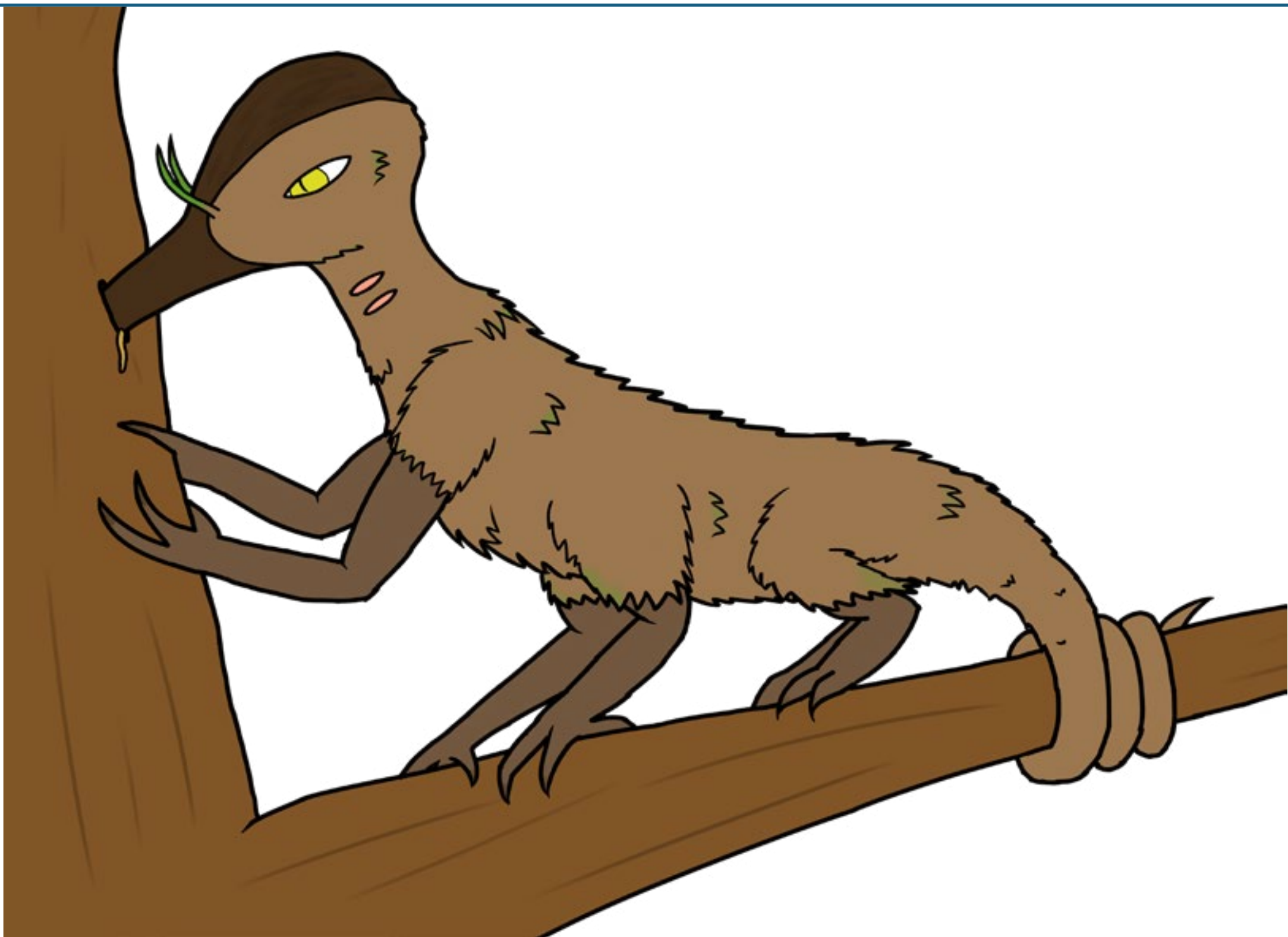
Step Four: The Finer Details

This is the final step — taking the creature made in step 3 and tailoring it to the niche you decided on at the beginning. Look over what you have and make minor changes; the shape of the eyes, the length of the legs, give it some colours – for camouflage or otherwise.

Our example creature looks like it could fit its niche well already, but there's more we can do. We will make its tail prehensile, like a chameleon's, and lengthen the waist to make it easier to curve around large branches. Since it may get a bit cold in the winters let's give the creature a thin downy coat. The legs are fine; the front feet are shaped like a songbird's, letting it grip branches, while the back feet aren't. Let's give them some claws on the hind legs to hold onto the bark, and camouflage it in an unassuming brown with hints of green.

Here is our finalized creature. It's not as important to draw this as it was for step 3, but it has the same benefits.

Step Five: The Family

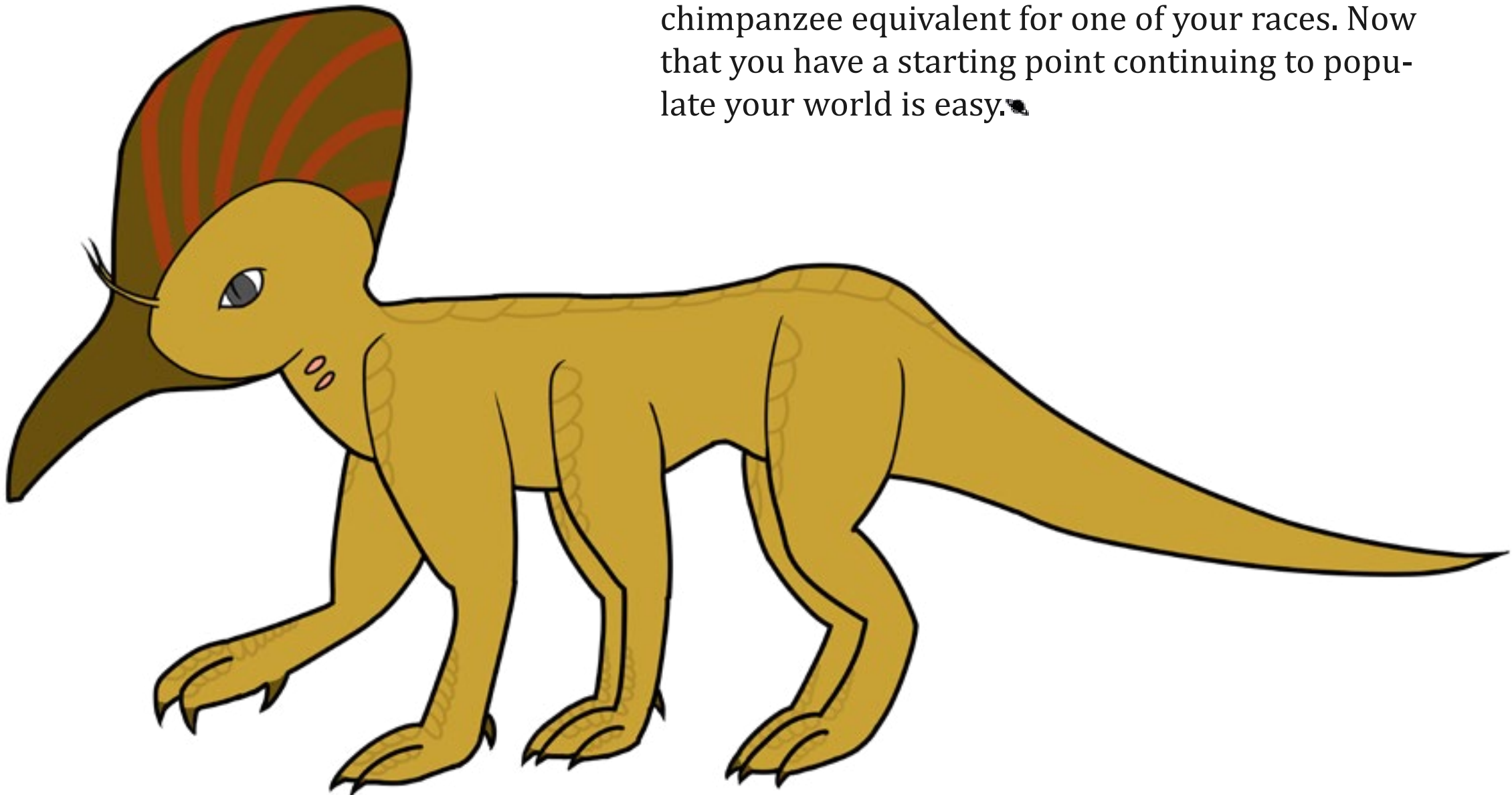


Congratulations, you've done it! Your creature is complete. But evolution isn't a straight line, it branches. You can use this to your advantage, turning your creature from step 3 into a template to make as many variations with as you want. Having related creatures will make your world feel more cohesive, and is far easier than creating one from scratch every time. Creating related creatures for different environments is simple, just repeat step 4 with a different niche in mind.

Let's make a relative of our example creature that's adapted to living in deserts. This creature

will drink water stored in cacti and eat their sap. As an adaptation it will be thinner than its forest counterpart, letting it release heat more efficiently. Its crest will be larger as well, and full of blood vessels, allowing it to control its temperature like the extinct Dimetrodon did with its sail. It will lose the downy coat and have a simpler, straight tail. Since it will not need its back toes, they will be reduced to small spurs. The desert creature will be a sandy brown, instead of the dark brown of its relative.

You can take this a step further and create distant relatives to your creatures, make ones that are a 'missing link' between two others, or make a chimpanzee equivalent for one of your races. Now that you have a starting point continuing to populate your world is easy.🐾



A LIVING WORLD

by Adam Bassett

Your world, vast or tiny, influences itself on a regular basis. Your characters invent new tools and overthrow established leaders; the landscape you've chosen for a mountain pass favors one side in a war and makes agriculture so difficult that only one culture has learned to farm there. Just as in the world we reside in everybody influences one another, always learning and exploring and becoming jealous of what others have or can do.

Keep this in mind and consider those in your world who may be influencing it in some way. Who are the leaders, rebels, scientists, or holy people that may have an influence on the world around them? Who among them might be documenting the world, exploring new portions of it, or developing new methods of interacting with their surroundings?

This recommendation is three-fold. Firstly: latch onto those influential people of yours (see also, if this concept is of interest to you, [the Great Man theory](#)). Many will likely change the world around them through selfishness, charity, or indifference. You could consider any historical noble family, an easy example would be King Louis XIV of France, and you have an idea of how personal motivations lead to tangible consequences. Characters such as these will help you shape the world, just as other great men often have. Perhaps they will reach their goals, or perhaps they will be stopped. That opposing force could be anything from a dragon, to illness, age, or the classic rival. Either way these characters will be driven to change their world. I recommend that you write about them, even if you're writing a story and they never appear in it. They will still help inform us of the world and its people, and the setting will be better because of the rich history and characters it offers. Just look at George R.R. Martin's *A Song of Ice and Fire*, which features whole generations of characters who never grace the pages of the books or HBO series. Everybody knows of the Mad King and Brandon the Builder — they are famous names in Westeros — but neither is actually in the story. Both have died before the prologue of the first book/season. Despite their demise, both are mentioned in and have influenced the world; the Mad King displaying

tyranny and being the instigator of Robert's (important living character at the start of the story) rebellion, who lives still at the start of the story. Brandon's mark on the world was, among other structures and lineages, the Watch's massive wall.

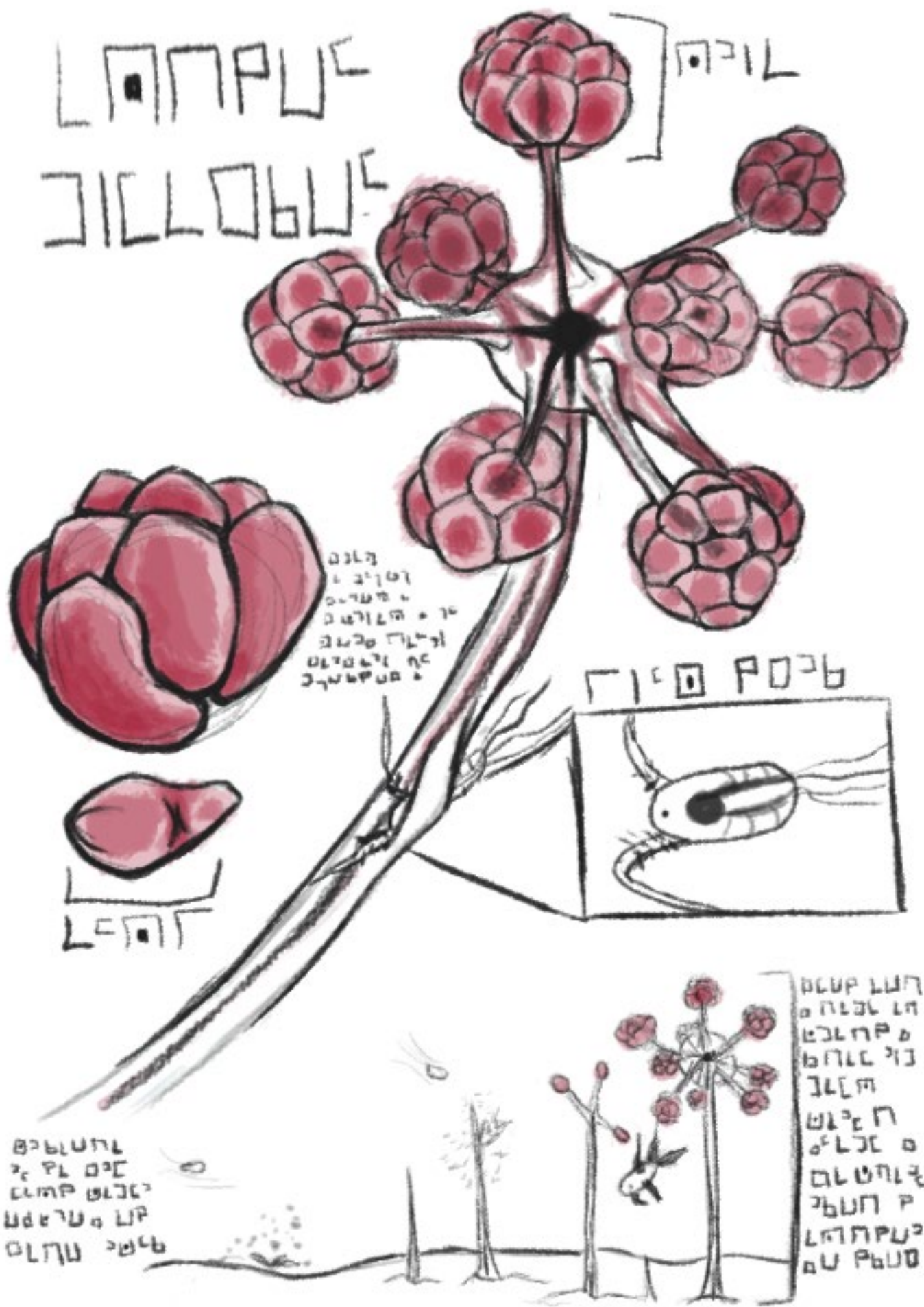
Secondly: explore the world as if you were a person in it. One of the best ways to flesh out your world and get inside the heads of those who might live there would be writing a journal from their perspective. One method of working this way would be to create entries similar to those such as explorers like Charles Darwin did. You can find his journal online, both in text entries and as a series of images (linked at the end of this article). Darwin explored lands entirely new to his people and wrote about it frequently, sharing his experiences and theories with the world even when society balked and scoffed at him. Surely, at some point in your world's history, somebody got curious and started examining the world around them — or explored a region that had never been seen before. You do not have to fill a journal with analysis of your world, though it may be an excellent way to explore and detail the flora and fauna while simultaneously getting in the mind of an explorer from one of your cultures.

An interesting experiment may be to write multiple journals — let's say two — each from the perspective of a different culture. Perhaps one is vegetarian and the other is omnivorous; these are simple variances, but for the sake of this example it will suffice. I would be curious to see how each person journeyed in the world. How much extra time on the flora did the vegetarians spend? Perhaps the omnivores hunted some animals down and wrote about their anatomy in more detail, or about their flavor, something that would make the vegetarian culture feel uncomfortable. Let your characters inform the way you write when creating a journal and you will both explore a people's culture as well as detail the world around them. Soon this will have compound benefits and, provided you begin with a few unique cultures, perhaps you'll have conflict between people based simply upon their different interpretations of a region or items within it.

Thirdly: create art that in your world. Depending on the purpose of your world you might only need to know the genre and the name of the artist. Perhaps you write all of the lyrics of a song down as well, or have a full-sized painting sketched out. In a world I've been working on for a while many songs are based off of jazz and other styles from the 1900's. I've done this to help set a tone when the record player comes on, or when a character thinks a song strange when he hears it played on nothing but a guitar. Keep in mind that the type of instrument or medium may also help inform us about the culture, about the cultural preferences and concepts of beauty. Music and art are expressions, and the artists will surely be expressing certain views, in turn they might encourage or discourage war, be thinking of a lover, or perhaps they just saw a pretty scene and painted it. If you delve into that scene a bit more, though, you may find it was that artist's home when he or she was a child, or the workshop of somebody notable whom the artist respects.

Building a world, along with the multitude of things that exist in it, may be achieved with glimpses through the eyes of explorers and artists. This will offer the sort of detail that is impossible to find in documents and spreadsheets written by, and exclusively for, the creator of the world. As my fellow writer Bokai said before me, "dig deep and go narrow". A narrow perspective will offer a unique perspective to flesh out your world in new ways.

Further Reading:
- [Charles Darwin's journal](#)



WORLD-FIRST DESIGN

Psycho Romeo

We've all heard the phrase, "If a tree falls in a forest and nobody's there to hear it, does it make a sound?". It brings up the question, of how one proves whether something happens despite nobody being there to observe it. Paradoxically, to know for sure whether or not a falling tree makes a noise when no one's around, someone must be around to listen.

But let's take that thought exercise a step further: Does that unobserved tree even exist at all? This is the premise we'll be exploring in this article about **WORLD-FIRST DESIGN**.

To understand world-first design as a world-building concept, let's begin by looking at it as a game design concept. In the realm of gaming, world-first design refers to a world that functions without the direct input of the player. Bandits don't start raiding a caravan just because the player is nearby to 'spawn' the event. The bandits raid regardless of whether the player is there to observe it. The consequences of this event are felt regardless of whether the player is involved or not. The player certainly can intervene if they have the opportunity and desire to do so, but the important bit is that this event transpires because the world told it to, not the player's presence.

That's not to say the player can't influence the occurrence of this event at all. For example, perhaps the player has been doing petty crimes that tie up the guards in town. The consequences of this action influences the world, and the world reacts to these influences. Perhaps there are fewer guards sent with each caravan. This makes the bandits bolder, causing them to raid more. It's still the world causing the raid, despite it being a consequence of the player's actions. Players being able to commit crime and guards getting tied up by responding to them is a mechanic. Bandits considering the number of guards that attend a caravan when deciding whether or not to attack is a mechanic. Think of a game built with world first design as a simulation which the player participates in.

By contrast, a world that is set up to deliver a specific predetermined experience is an example

of story-first design. The bandits will kindly wait to raid until the player happens upon the caravan (which is also patiently waiting to be raided), because stopping a bandit raid is a fun and interesting event to take part of. While it might be enjoyable for the player to encounter situations where they can be the hero, sometimes the constraints that guide the player on this path might seem somewhat unbelievable. The player might find themselves saying, "Why do I have to do this," or, "Why can't I do this instead?". Some examples include, "I should be able to reach that doorway, but this waist-high fence is blocking my path," or, "Why can't I just climb into the locked house through the window?" A polished game will try to hide these invisible walls and suspend the player's disbelief as much as possible. But in a story-first game, what would make sense for the world is second to what would make sense for the story. In these examples, the player jumping the fence or climbing through the window just isn't how the story goes, and therefore, they're things that aren't done. Similarly, the player leaving the caravan to its fate while they instead chase pigs or something just isn't how the level is designed to play out.

In a worldbuilding context, a world-first design approach will fill out a world with structures and systems that make it tick. This is a *functioning* world. It is a living, breathing entity that moves and reacts to stimulus and change. The events and actors within this world are constrained by its rules. All of these major and minor events can occur despite there being no grand story taking place. That's because this world is not a merely a story book or encyclopedia entry - a screenshot of a specific event or time. It's very much alive. Like a simulation, it's almost as if the world is run by a formula that determines how often caravans get raided - events don't happen just because they would make for heroic plot points. Instead, events follow from plainly observable causes.

What are the practical differences between a functional world and a story driven world?

A functional world is built out of mechanics such as magic systems, limitations on travel, po-

litical motives, etc. The stories that happen in the world are a product of these mechanics.

After defeating the dragon, the warrior was imbued with an aura that inspired hope in all who gazed upon him, and soon after found himself appointed as the leader of the village.

In this example, we're given worldly reasons for why things turn out the way they do. It's established that the dragon bestowing a charismatic aura to its slayer is a mechanic of this world.

A story-driven world is driven by its plot points. The main story actors shape the world around them, because the event is the important aspect of the world, and the world is merely a vessel for the event to transpire in.

The warrior slayed the dragon, and when he returned he was appointed as the village leader for his achievements. Henceforth, his presence would always inspire hope within the villagers' hearts.

The reasoning for this is unimportant because in the end, it just makes for a satisfying story. The information is delivered in a way where we don't spend too long dwelling on why this makes sense. It's just how the story goes. The presence or non-presence of reasoning isn't really the important part to take away from this - we're not determining why the unobserved tree would make a sound or not. A tree that has no importance to a story simply does not need to exist in the first place.

But while it doesn't *need* to exist, there's no reason it can't exist. If two people take the same world concept, and one builds it as a functional world and the other as a story-driven world, you may end up with a very similar end result. The difference in worldbuilding approaches doesn't necessarily make a different world - though a functional world will often be more detailed than a story driven one,

and be filled with trees that the creator has no intention of ever allowing to be observed.

While this article is about world-first design and the creation of functional worlds, let it be said that there's nothing wrong with a story-driven one. Some people are far better at weaving words together to make something that sounds awesome, then backing it up with interesting lore. In the words of Mark Twain, "Never let the truth get in the way of a good story." To a certain extent, a story-driven world enjoys a bit of artistic liberty that isn't always available to a functional world. Again, a story-centric world is not at all inherently weaker than a functional one, it's just executed differently.

On the other hand, while unhindered artistic liberty is nice, some people may want to start with some structure and extract stories from it. Having those constraints (e.g., this can be done this way, this can't be done that way) can be a powerful worldbuilding strategy. Through world-first design, a worldbuilder can create a world, create actors in it, create a problem, and observe the actors solve these problems. Provided the mechanics of this world and these actors are strong and pronounced enough, a fully functioning world can write its own stories. The creator must merely observe them play out and record the story that unfolds before them.

But which worldbuilding style is ultimately better?

Despite how strong a functional world can be, a world-first designer can sometimes write themselves straight into a dead end. It's not terribly uncommon for world-first author set out to write a love story and get stuck when their main characters break up. In a functional world, the creator doesn't necessarily hold the reigns anymore and surrenders them unto the mechanics that they've designed. When you set up robust rules to govern your world, you're probably not going to want to break them. The ex-lovers can't just abruptly get back together again, any attentive reader would see how bizarre and forced that is. Whereas worlds driven by their story can easily write themselves



Credit: Tristen Fekete

around these issues in a very clean and exciting way. There are not usually enough established mechanics for the reader to be questioning whether this makes sense or not, and they will continue being swept away by these lovers' journey. While I am a huge fan of world-first design in games, worlds, or whatever, sometimes even functional worlds need to bend their rules a bit to make sense. I would not necessarily say there is a best way to worldbuild -- it would seem one of the most powerful and versatile ways to do it would be to use a combination of world-first design and story-driven design.

A worldbuilder can spend the rest of their lifetime documenting how every detail and mechanic of their world interacts with the others. Despite how thorough this is, it's far more work than any reasonable person might get involved in. At some point, a world-first designer is going to have *enough* of a functioning world, and that amount will change depending on what the builder wants to do with it. When you have *enough* of a functioning world, it can serve as a platform for building story-driven content on top of it. If a story writer is very careful to respect the world's established rules, they can still sweep the reader away into what becomes almost a fantasy within the fantasy.

Consider the Lord of the Rings, specifically The Hobbit books and movies. I'm no Tolkien loremaster, but it's no secret that the movies and the books differ. In my opinion, a large part of this is due to one taking a more world-first approach and the other a more story-driven one. The movie had to go so far as to invent characters and omit elements to ensure that the story would flow nicely. Despite this, if we hadn't read the books beforehand, we'd have no idea they weren't the same. We don't question these deviances because the story-driven elements flow into the world's mechanics seamlessly. Provided there's no major conflicts or blatant con-

traditions, breaking the world's established rules a little doesn't necessarily make for a bad story (though it might leave a bad taste in the mouth of some of the more hardcore fans). It's just story driven content that is supported by a functional world.

So how do I start building a functional world out of mechanics?

Mechanics exist everywhere; we simply must identify and document them. In the real world we are constrained by gravity and other laws of physics. We have no access to the arcane. Doing things requires an amount of motivation, which will vary from person to person and task to task. These are mechanics, and literally every worldbuilder is going to deal with them in some amount. These mechanics shape our interactions such that they happen in one way versus another. Our interactions are just events in the story of our life. If someone were to record these events and make an /r/worldbuilding post, it'd be an example of using world-first design to produce a story.

The tricky part is creating mechanics that are interesting, and this is where a lot of people get hung up. What kind of magic system should I use? How would an environment that was constantly raining affect architecture? If my political entities could only be comprised of women, would government be any different? These are sometimes difficult questions to answer, and the inability to answer them is often attributed to lack of creativity. However this has less to do with lack of creativity and more to do with lack of confidence. Remember, we are not worldanswerers. We don't have to have to know the answers. We are *worldbuilders* - we simply make these things be.

So when we are building mechanics, think less about what makes sense from our perspective,

our perspective being that of humans from this world called Earth (presumably). Instead, think about what makes sense from the perspective of the world that's being built. That's where the sense has to be sourced from. Let's try an example. We will create a setting, create a pair of actors, create a problem, and then play out the rest of this story.

Horatio's house is getting bug bombed today and he's being forced to spend time outside. His mother suggested he get some sweet rolls, so that's his current plan. He's reserved and stutters out his words. Despite his shyness, he tries to be very accommodating and never wishes to be an inconvenience to anyone. Overall, he has a very withdrawn nature, and exudes an aura of helplessness.

Meanwhile, Claudius is headstrong and confident, unafraid to push his positive disposition on others. Never hesitating to help those in need or rise to any challenge, he doesn't realize that he often comes on a little too strongly to be considered socially acceptable. His pet turtle recently died, and this has him quite distraught (though he dare not show it). To lift his spirits, he's decided to get out and help someone else in need. Overall, he has a very forward nature, though sometimes oppressively so.

Horatio and Claudius meet in front of a bakery, where Horatio is observing an argument between the bakery manager and the baker over tardiness and motivation. This is a rather heated argument, and it looks like the baker is being fired. Without someone willing work in the bakery, it will surely have to close for the day. Claudius can't stand idle after seeing Horatio's defeated face.

Now that we've outlined some of the mechanics and elements that make this world tick, how do you see the rest of this story playing out? What does Horatio's initial interaction with Claudius look like? Watch as the journey of Horatio and Claudius' Quest for Sweet Rolls plays out before you.🐢



Credit: AnotherCollegeGrad

REVOLUTIONS

StronglyOPlatypus

50,000 years ago the human population was at most a few million. They were mere hunter-gatherers, spending the majority of their time searching for food. Humanity lived day to day by eating, sleeping, and reproducing. This animalistic behavior had gone on for millennia, showing no signs of changing for most of that time.

Then, everything changed. When humans started to act, well, human everything changed. We lit fires, made tools, and created art; ceased to just be primates. Scientists call this shift in humanity “behavioral modernity.” The subsequent Neolithic Revolution ushered in a new era in human society, one where we discovered agriculture, created economies, and began to form civilizations. Since then humanity has gone through many more periods of rapid advancement, driven by new inventions and ideas. In other words, technological revolutions.

The importance of revolutions in worldbuilding is not to be underestimated. Whether the world is modern, medieval, futuristic, or of another time period, revolutions have shaped some of the most important aspects of society. When creating history a worldbuilder can use revolutions to shape their civilizations, influence change in nations and ideologies, and create the conflicts that drive stories. This article will go over the various causes, aspects, and effects of technological and cultural revolutions, as well as how to apply them in a worldbuilding context. It is the aim to show how they can be used to both create realism and create fantastical and futuristic settings.

One of the most clear effects of huge shifts in technology is huge shifts in paradigm and the way ideas are perceived. Take the printing press as an example. With it came the ability to efficiently mass-produce books, and this forever changed the way society viewed literature. Prior to its invention books were written painstakingly by hand, consequently only rich nobles, royalty, and scribes were, for the most part, literate. Once written works were easy to produce it became a lot more beneficial for the average Joe to learn to read. Copies of important works of literature became readily

available to scholars, enabling modern science and philosophy to come about. New ideologies, fields of research, and organizations were able to communicate their ideas to large amounts of people. Controversial ideas like democracy, evolution, communism, or atheism could no longer be suppressed by destroying every extant copy of an author’s manuscript; there simply were too many copies that could be produced too quickly. The spread of ideas that occurs when a new method of communication is discovered or invented is inevitable and can easily trigger a revolution of thought.

Such revolutions are often isolated to certain countries, civilizations, or spheres of influence. Many cultural and technological revolutions take place during “golden ages”, when civilizations are at their peaks. The Arabs, Romans, Greeks, Persians, Chinese, Japanese, Indians, Aztecs, Mayans, and many other influential cultural groups and civilizations contributed invaluable progress to art, science, philosophy, and literature during the height of their power and influence. These apexes of civilization can be classified as revolutions in their own right, as they are periods of great advancement and learning, which drive change. It is by no means necessary for a government or civilization to fall or be overturned by a revolution, in fact the changes brought on by one can strengthen preexisting institutions.

With that said, revolutions provide an excellent opportunity for changes to occur within established systems. A worldbuilder looking to turn the institutions and ideas of their world’s past into the vision they have for their world’s present or future may make use of a revolution to do so. The creator can envision new technologies that would make changes necessary for those institutions and ideas to survive, create new institutions to supplant those that do not, or simply provide an environment where change is likely to occur. Specific philosophies, technologies, and methods of communication are necessary for distinct governments and societies to exist. Revolutions are invaluable for creating the institutions that a worldbuilder wants to have exist within a nation. Sometimes one has added something to the past that they’d rather

not have in the present or future. These ideas can be removed by a carefully placed revolution, allowing the worldbuilder to make distinct time periods and create a realistic sense of historicity. All of this is done without needing to change the history that's already been written, or to handwave things away. Revolutions help a world's history transition smoothly and logically between eras.

Another important effect of revolutions is the increase in population that they bring. Technologies like agriculture and medicine drastically increase the number of people the land can support, as well as the number of healthy people. New medicinal and agricultural advancements due to revolutionary or non-revolutionary reasons can result in less dangerous work, and as such workers will live longer. If a revolution yields a technology that helps protect against a frequent cause of death one can expect the population to increase. It is important to note that increased population doesn't always mean good things. Overpopulation, especially when created artificially, can be devastating. If the population grows faster than it can handle, whether due to immigration, political campaigns regarding reproduction, magic, or something else entirely, disease and famine will soon follow. If a worldbuilder wants their civilizations and sentient races' populations to grow and fill up the wide world they've created, revolutions are an excellent way to do so.

It is a common and false assumption that change is necessarily good. While change is certainly often for the better many times revolutions can change things for the worse as well. The most notable example is that of the Industrial Revolution, and the modernity and human interference with nature that came with it. The beginning of modern industry in the 18th century marked the beginning of an age where humans release harmful pollutants into the air and water in mass quantities; an age where species are dying out rapidly thanks to human activities. From the perspective of the other lifeforms on Earth the Industrial Revolution was largely a change for the worse, even if it did have plenty of beneficial effects as well. Another example is that of the Great Leap Forward. Thanks in large part to Chairman Mao Tse-tung, and his Communist Party of China, millions of Chinese starved in an attempt to rapidly industrialize China's agriculture and manufacturing. Especially when change is forced by overzealous leaders, even if well-intentioned, harmful effects are likely to occur.

However, this doesn't mean a worldbuilder shouldn't add those things. If they don't want to develop those unsavory parts of the world, that is fine, but it is a common mistake among some worldbuilders to accidentally create ideal situations. They should be careful of falling into a "good king" trap, where if a worldbuilder is not setting out to make a certain part of the world "bad" by some definition they will neglect to add nuance to the "good" parts. This can be seen in the trope of having a kingdom prosper while its ruler is a morally good person and/or a good leader, regardless of other unrelated factors. This can work depending on the world's tone, but is not realistic — it that's the worldbuilder's aim. The leader of a nation, no matter how morally good, cannot guarantee that their nation will run smoothly and prosper. They can, however, try to improve the situation with the power they already have. Including a little tragic, or evil, change — even in "good" nations — is the right decision when making a world that is realistic in terms of politics and government.

As most people already know, the word revolution also has a different meaning; a military revolt. A revolution occurs when a new group overthrows the current institutions, establishing a new system in their stead. Obviously there are some notable similarities to the word's technological definition, in fact, the two are often connected. Sometimes a government will be too outdated and unable to adapt to the changes brought on by a technological revolution, therefore rebels will take down the old system and replace it with one more suitable to the new situation. Other times the society brought on by a revolt might cause a revolution in thought and technology, or a counter-revolution, for a variety of reasons.

Technological change also affects the military in great ways. Numerous weapons, inventions, and strategies have forever changed the ways that wars are fought. The use of horses, gunpowder, internal combustion engines, airplanes, radio, nuclear weapons, satellites and many more inventions are among them. A keen eye might notice that many of these military inventions did not remain just as weapons, and their biggest effect was not necessarily in the military. Very rarely does a revolutionary technology affect just one area, even if it might seem like it at first. Such technologies or ideas usually have wide-ranging influence that manifests itself as change in multiple fields. These technologies in some way changed the capabilities

of weapons, changed the battlefield, or changed strategy. It is just as important to remember that the application of technology does not happen immediately.

For a period after the adoption of a new technology there will be an odd situation where all strategies are theoretical and no one really knows how to best use this weird new “thing”. Sure, they know how to actually operate it, but how do you deploy something that hasn’t ever been deployed before? After the given time for experience to build up generals will likely have realized how to use the new technology to its fullest extent. Due to this certain nations with the same technology might be on uneven footing, especially if one of them hasn’t fought in a real war before using it, or under a new form of warfare. If technology is very difficult to adopt people might give up on using it, deciding it isn’t worth the trouble. It is also important to note that innovation will continue even after generals have mastered the new strategy, and both technology and strategy must constantly evolve to respond to new developments in the battlefield.

Of all the weapons ever created none has had such an interesting effect on war and diplomatic relations as nuclear weapons. Never before has humanity been able to devastate the entire world on such a large scale. Nuclear weapons primary use is not as a physical weapons, except in the sense that they exist and could be used, instead they serve as a strategic, and psychological, weapon; a card that’s always in hand but never played. The threat of nuclear war, and the widespread destruction that would be wrought on both sides, can prevent bitter enemies from going to war. Diplomatic relations are forged and broken over bombs. While more primitive or realistic worlds might not have much use for weapons of mass destruction, like nukes, there is great potential in speculative and fantastical worlds. When magic has the power to wipe out cities, when the wrath of the gods is turned against a particular nation for the first time, or when a weapon the likes of which the world has never seen before is deployed, war can and will change forever.

While the effects of revolutions in more well-known fields can be important, mundane elements like economics and trade are vital as well. In fact, they are perhaps the most affected by technological revolutions. The container revolution, as the name suggests, was the widespread popularization

of container shipping in the 1960s. This seemingly uninteresting and obvious innovation led to reduced costs and easier transportation of more materials over longer distances. This is probably the most notable example of how something so esoteric and simple has had such a revolutionary effect. Thanks to this revolution the economy has become much more global, spurred on by inter-continental trade that has permeated borders from the Americas to Asia; consequently trade is a great deal more profitable. It’s hard to understate the effects of this; the modern economy is based on an economic system dependent on and created by shipping containers. Worldbuilders sometimes focus more on wars and aesthetics when it comes to deciding the effects that transportation and similar technologies will have, especially if they’re trying to tell a story, but lip service should at least be paid to economics.

A worldbuilder, even if they aren’t one of those who enjoy creating economic models and thinking about the logistical ramifications of transportation methods, should probably give it a little thought. For those who do enjoy it this should be no problem, but those who don’t might have some issues deciphering what has long lasting effects on the economy and what will have very little. As a general rule if something affects the military, transportation, or energy infrastructure in a significant way it will affect the economy as well.

Up until this point, the article has focused mainly on real world revolutions. The fantasy or sci-fi worldbuilders reading this article should now start paying close attention, because it’s time to talk about magic and the future!

The majority of worldbuilders have some sort of fantastical element in their world, whether it’s true magic, technology, alternate history or something else. Magic is probably the most popular form of fantasy in worldbuilding and the majority of magic systems allow for some amount of revolution. The effects on the military are clear; spells are efficient and deadly weapons. There are possibilities for change in all fields. For example, can magic shrink and enlarge things? This might trigger something akin to the container revolution. Can it raise the dead? A ruthlessly efficient and powerful necromancer could forever change labor by creating cheap workers, the amount of which is limited only by the capabilities of necromancy. Magitech can do what technology can — and then some more.

Fantastical beasts like dragons, hydras, and golems could make agriculture and transportation much more efficient, either as beasts of burden or livestock.

The introduction of magic to a nonmagical world would have long-lasting and drastic effects on everything. If the capabilities of magic change for whatever reason, whether it be divine intervention, the discovery of a spell or artifact, or a particularly innovative wizard, one can also expect society to change. This is especially true if many institutions or facets of reality are based around magic. While obviously every magic system is different there's almost always an opportunity that a worldbuilder can exploit to create a revolution.

Much of this also applies to science fiction. In the place of magic and wizards there are computers and engineers to perform fantastic deeds. There might not be zombies, thralls, or mythic beasts, but robots come pretty close. In fact, automation is poised to cause a revolution in our own world quite soon. Similar to magic it will drastically change labor, much as the Industrial Revolution did. In addition to the "magical" elements sci-fi worlds have, by necessity, other technologies which can cause revolutions in the myriad ways enumerated in this article.

Other speculative fiction worlds taking place on Earth, such as alternative history, near future, and dystopian settings can and should make use of

revolutions. They are an invaluable way to differentiate one's alternate world from the real one, and can serve as a consequence of the point of divergence. In some cases they can even be the point of divergence. We really only have one real example of how history and technology, on a global scale, should progress: Earth. If technology progressed a different way, which it certainly could have, our world would be very different. Maybe Rome never fell and classical knowledge was never lost; maybe Gutenberg died in a war before he could invent the printing press; perhaps the Native Americans, too, discovered gunpowder by the time the Europeans came. There is a wealth of opportunities to create alternate histories, dystopias, and future worlds with revolutions. The societal, economic, and technological change needed to turn Earth into the land of a worldbuilder's imagination can be achieved conveniently with them.

With that, this article must come to a close, and I sincerely hope the reader has learned something valuable from it. *Vive la révolution!* 🍷

Credit: Wynter



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