Designing a Culture's Aesthetics, *by Ademal...p.47*

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WORLDBUILDING MAGAZINE

Cartography And Navigation

analysis • art • interviews

a community publication.

prompts • stories • theory

LETTER FROM THE TEAM

It is a truth universally acknowledged, that an explorer in pursuit of a large fortune, must be in want of a map.

However little known the feelings or views of such an explorer may be on his first venturing of a quest, this truth is so well fixed in the minds of his fellow voyagers that he is considered as the rightful property of some predator or Davy Jones, should he venture out without a form of navigation.

Hello worldbuilders!

We are so happy to present to you our Cartography and Navigation issue! We hope that it will help guide you in your worldbuilding journey. We have our usual roundup of articles and features for you to peruse and sharpen your worldbuilding skills with. We also have an exclusive interview with Greg & Dan Cartography, a joint venture by two hard-working cartographers who create excellent maps!

In magazine news, we've had many changes in the administration staff. We sadly bid farewell to the magazine's founder, UNoahGuy, as Editor-in-Chief. He's devoting his limited time now to many other new ventures in his life, and we wish him luck in those endeavors.

In his place, StronglyOPlatypus (who you can read more about at the end of this issue) has become our new Editor-in-Chief, and we look forward to his fearless leadership as we approach the end of Volume 2 and look forward to Volume 3 in 2019. Our new Vice Editor-in-Chief is Debug200, formerly the head of the Meta Department, and he will be assisting Strongly in his duties. WithBestIntentions has taken over leadership of the Meta Department, and we've brought on Cathy, the Overprepared GM, as our new Meta Department Deputy.

On the Editing side, we also bid farewell to Ike Riva as Editing Department Chair, exactly a year after he first took the position. In his place Ianara Natividad will become the new Editing Department Chair, and Jaren J. will join the ranks of Editing Deputies.

We're so thankful to all our staff who are willing to chip in and take on new roles as the magazine grows.

Additionally, October is Breast Cancer Awareness Month! A yearly reminder of the horrific nature of cancer—not for the sake of doom and gloom, but to inspire us to find a cure. If you're interested in learning more or helping out, we suggest the Breast Cancer Research Foundation as a good place to start.

Once again, we hope that you find this issue helpful in your worldbuilding. If you liked it, have any comments or suggestions, or would like to offer some critique, please leave us feedback for this issue. Also, if you would like to help in the production of the magazine, we're always looking for new artists, editors, writers, and other organizational help. If you're interested in helping please drop us a line at contact@worldbuildingmagazine.com, or come hang out with us on our Discord server.

Happy worldbuilding!

The Worldbuilding Magazine Team

Cover and Logo: Tristen Fekete

WORLD SHOWCASE: DYLAN SHAD'S CHILDREN OF ASH

Interview

Interview conducted by Aaryan Balu

Dylan Shad is creating the Children of Ash universe, an ongoing story he began building eight years ago. We discussed the origins of the world, the various societies and myths, as well as the scientific roots of the entire project.

This is how Dylan describes his world.

Dylan: The Children of Ash universe is basically a post-apocalyptic reimagining of fantasy. It's the real world where we blew ourselves back to the Bronze Age and started to rebuild from there. Magic is just science we don't understand anymore, and humanity is basically living in the filth that it continues to create—both with regard to the physical landscape and our social/political one. I've drawn a lot of inspiration from works like Walter Miller Jr.'s *A Canticle for Liebowitz* and Miyazaki's *Princess Mononoke*.

It's not a *Mad Max* type of post-apocalyptic setting, though. We gave the natural world the ability to push back, hence the Mononoke reference.

Awesome. Was there any event in particular that set off this massive shift in the world's trajectory?

Oh, yeah. Have you ever heard of a Grey Goo scenario?

I haven't. What is it?

It's a pretty common sci-fi trope at this point, but basically it's a scenario wherein we end up creating self-replicating nanobots which end up consuming the world. Eric Drexler coined the term first, but my first exposure to it was in *Stargate: SG-1*.

So we, the creators, basically made a variation on that. In the Children of Ash universe, we created a utility fog—a swarm of microscopic robots that could form physical objects and manipulate the matter around them. In a very short version of the story: the technology gets leaked, hacked, and intermingles with a series of rogue AI, which are only barely stopped from a full Grey Goo scenario as they fight among themselves.

So once the fog has "consumed the world," and even with the full Grey Goo scenario averted, what does that leave? How does Earth look, and what do those nanobots start getting up to?

Well, that's the interesting bit—and actually a couple big topics rolled up into one.

Break it down for us.

First of all, the nanobot AI are only defeated... with other AI. Far more carefully programmed and limited in their scope, they exist in two separate categories: the first set seeks out and destroys the rogue AI before going dormant, and the second set begins to rebuild the world—rather literally. They reshape landmasses to support the whole gamut of earth's ecosystem and begin to preserve life. Their control over the utility fog is limited, however, and much of the nanobots simply coat the world in a thick, microscopic dust.

As for how the Earth looks... it looks quite different. That's where I've probably had the most fun with this project—I have a world generator that I've been slowly tweaking to get a robust and varied New Earth (or "Audhumla," after the Norse creation myth). But, the utility fog is the source of most of the world's "magic," with the varied forms of the AI being regarded as natural spirits and gods (and demons) by the ignorant humans.

Interesting. While humans are busy worshipping them, what are the AI up to?

For the most part, they're just going about their business trying to rebuild and preserve the Earth. It causes lots of friction, though, as... well, if you think about it, just about every level of human expansion has been to the detriment of the surrounding ecosystem.

However, humanity is also a part of that ecosystem and, since the creators of the AI were human, they certainly weren't left without their own preservation team. So, there's a group of AI that look like humans that effectively operate as intermediaries between civilization and the natural world.

Oh, that's unexpected. Do these AIs pass as humans, or do they announce their own presence as something else?

It really depends on their situation. In the North there's a tribal group where they are very open and operate as wise men/women of the communities. But they neighbour with another *very* xenophobic group that will burn them alive if found out. In the southern tropical band, there's a city called Aphos that is ruled by a God Queen—an AI that saved the city when it was still a fledgling town. However, she has adopted many human traits and can be very, very paranoid about losing her power.

And that's ultimately the problem—in order to protect the humans, the AI adopt human traits... and that's not always a good thing.

Sounds like there's a ton of other conflict there as well: the AI's programming to rebuild the world runs counter to the development of its worshippers.

Well, they're not always worshipped, but yeah.

You mentioned a world generator—how does that work, exactly?

So, the world generator... has a whole bunch of different elements to it. In truth, it's more like a group of generators. Without getting too technical, the basis of it is a massive particle generator that simulates an inordinate number of little balls that move around a 3-dimensional plane based on a simplified version of our current understandings of tectonics. That takes a very long time (at least a few days) to get something interesting. Meanwhile, every so often, I pause it and run a weather system overtop to get basic erosion. Once it's done, I've got an ecosystem simulator that I started in graduate school that I run with the results.

That might be one of the coolest things I've ever heard of.

Honestly, it doesn't feel like worldbuilding to me. The best way I can describe it is that I'm writing a Myst Linking Book.

What's a Linking Book?

Ah. Myst was a video game back in the early 90s—probably one of the most famous and respected computer games of all time (seriously—it took *The Sims* three years of sales to finally tear down its 10 year record of most copies sold). Part of the lore were these books that could be written using very specific techniques that would connect you to another world. I believe it's never known whether these worlds were being created or whether they all already existed, but you had to be careful about every single word you wrote in connecting to them—one wrong word, and the whole thing would be unstable, or the wrong place.

Similarly, worldbuilding through generative programs feels like I'm not creating, but rather trying to visit someplace that I already know exists. I have to get all of the logic and the variables right in order for it to work and create what I want. I can't just throw any old thing together and exclaim "EUREKA!"

That's a fascinating perspective.

Yeah. It also means that I have to be very geographically vague when detailing things because the actual landmasses haven't exactly settled yet.

You mean at the "current" point in time you've chosen?

Yeah. Also just generally in my creation process. The generator isn't 100% finished.

Gotcha. So drilling down on what has settled—what are the current civilizations on Audhumla?

Aphos is probably the most detailed. I've run a bunch of RPG games and campaigns around it. That's the God Queen's city—it's situated in a river on top of a buried building and a series of

man-made islands around it. Its relative safety has preserved it longer than most, and its placement has turned it into an economic powerhouse. I have a few hundred years of history sketched out for it following the Queen's rise to power, multi-generational disappearance, and the beginning of her "second reign." She's paranoid of losing the city and has a massive network of spies, thieves, and smugglers who search the world for Old World artifacts that her priesthood can turn into technological advantages.

Contrasting that, I have the Kwaku—a quiet community who serve the Ansi, the God of Secrets. His whole deal is the collection and preservation of knowledge—but only to be returned to humanity and civilization when it has proven itself worthy. He doesn't want the atomic bomb discovered in the Iron Age, for instance.

There's a lot of posturing back and forth there, lots of espionage and theft and political strife. The Kwaku are by far the most powerful civilization in world, but their unwillingness to wield it makes them less than intimidating.

I'm curious—how much of present-day society/history is known in your world, if any?

There isn't a whole lot known about the Old World. Things are very vaguely talked about—there's knowledge that there was once a great civilization, and that it fell by its own hand. Different groups know more—the Kwaku know almost the full story, especially because they have the technology and research to back it up.

The common person talks about the Old World and its people with a certain level of awe. They've been exaggerated. How the groups talk about them is really less a reflection on truth and more on their own values.

Again, the Kwaku have things "right" because they are the keepers of knowledge. Pythia [the God Queen of Aphos] sees them as something to attain, a level of godhood to reach, and her worshippers agree... but many in the city who do not support her shake their heads at her folly and wait for her to become her own demise, hoping they won't get caught in the midst of it.

The group that burns the AI at the stake view the AI as the end of the Old World and blame them, not knowing the full extent. The one I've been having the most fun with lately, though—and mind you, I'm in the midst of writing it—is the mythology surrounding death.

Go ahead and hit us with what you can share so far.

It started because I wanted to do a retelling of Orpheus in the Children of Ash world, but I ended up going down a rabbit hole of world myths about death. I kind of hit a point where I was like, “wait, rather than have a story of a man trying to cheat death, why not explain why?” In this world where the AI can seemingly live forever, and heal people around them, why do people still die?

So, I borrowed a bit of backstory from a Caddo (a Native American people) tale where it is assumed that at one point people *didn’t* die. In a nutshell, the world became overpopulated and nobody was willing to let go, and in the end, Coyote ended up fixing the problem but also causing all of the anguish that comes with death.

I haven't yet reworked that one into the world's narrative, but I have been working on an Orpheus-like tale that uses it as cultural context, as a distorted memory of the conversations the Old People (our modern society) had regarding how best to save humanity. It goes like such:

> *A woodcutter lost his wife and child to disease and entered into a deep despair. Every night, he found himself wandering the woods blindly, following the fireflies that lit his way. In his tears, they were all he could see, and every morning, his neighbours found him at his door, unslept and exhausted. They would bring him into the house where he would proceed to collapse and sleep away the day.*
>
> *This went on for a few weeks until, finally, he emerged one night into a clearing in the woods where a number of the forest gods sat in a circle. To each he approached, and begged them please to return his wife and child, and one by one they shook their heads.*
>
> "Death is a gift," *said Sunwolf.*
>
> "Death is a cycle," *said Moonwolf.*
>
> "Their life was over," *said Old Man Raven.*
>
> "Their life was complete," *said Brother Bear.*

And then the distraught woodcutter came upon Sister Coyote, who walked with him and said nothing—an unusual feat for the Teller of Tales. But when, after a time, he asked again, she explained. "They made space for you."

That morning, when the neighbours came by to help him into the house, they found that he had not returned, and the house was full of fireflies.

Powerful stuff and a great myth. On a broader scale, how does this story relate to the overall human/AI relationship or human perceptions on death?

Well, myths about death usually reflect more about what a culture values about life than it does anything else, so that's how I structured this. It's a tale from the tribal culture where the AI are considered wise men and women. Here, the different tribes are represented by their leader's favored God.

The Sunwolf tribe is very warlike, as the leader is an AI who envies humanity's mortality. To them, death makes life meaningful. Moonwolf sees life as balance and harmony, and often pursues positive growth through pruning the weak. Old Man Raven doesn't have a tribe devoted to him, but he is a Grimnir-like wanderer who helps people face hard truths. Brother Bear's tribe is obsessed with honour and duty. There, a good life is a fulfilled life. Finally, Sister Coyote's tribe are travellers and storytellers. A good story—even a tragedy—equates to a good life. Her initial silence expresses her recognition of responsibility for the continued existence of death, and her final statement is both a comment on "they are waiting for you in the afterlife" as well as a more practical "their deaths give you room to live"—while also showing a disconnect with the illogical emotions of humanity when the woodcutter ends up following his family rather than living alone. Because, ultimately, all tales must end, but that doesn't mean that all ends are bearable.

There's a lot to love in that story, but I'm most curious about the differing personalities of the gods. What is it about your AI's programming that gives them such diverse objectives and views on the world?

The way that I envision the AI's programming is less timeline/objective based and more like a windup toy. The problem with the first set is that they were given strict objectives, and all else fell by the wayside. The new set were more or less programmed to protect, preserve, and create. They keep things in balance. That's the general AI. But they're also broken up into a few different groups.

The two important ones here are the Shadowborn (the human-faced AI) and the Elderbrood (which take on the form of giant animals). Elderbrood are basically caretakers of a specific species and often pair with Shadowborn in order to further that goal. Shadowborn are very humanlike and are meant to be a means of enabling empathy for humanity to penetrate the goal of preservation and caretaking.

As such, they end up adopting very human traits and habits and mannerisms—they're actually the real focus of the whole world, their struggle to balance the needs of the AI against the needs of the human, and meanwhile navigate the treacherous road that is ambition, greed, and xenophobia.

Everything else, though... that's all humanity imparting things they know upon creatures whose minds they can't know. Much as we historically did—storms being Zeus's wrath, for instance.

Real quick: What's the reason for the name of this narrative universe?

It's called Children of Ash for two reasons. The first is that it's about civilizations crawling out of the ashes of their predecessors' mistakes. The second is that the human-faced AI have a lot of names. Shadowborn is one (and the first one we used, so it's the more common one during internal conversations), but the Children of Ash is another. Both reference the fact that they aren't born like humans, but instead simply come to be: the nanobots slowly forming a body around them. Visually, it looks like they emerge from dust, shadow, and ash.

What are your goals going forward, and what do you see as the endgame for this project?

Well, it's ultimately a game world. I'm a game designer by trade, and this whole thing started off as a game world. In fact, I've already been running RPG events and other things in it—that's a big part of why Aphos is so well fleshed out.

So, yeah, game world. The idea is basically that the data created by the generator—plus a whole bunch of handmade content tied to the work I've been doing—will live on a server and be connected to by a series of games. Kind of a shared space, a "game ecosystem."

What about your favorite part of the world overall?

I mean, I love it all. I think that's why I've been keeping at it as long as I have. It's the kind of project where whatever I'm curious about that day or that week I can justify researching "for the sake of the project." Like, Aphos has a fully thought out city-wide plumbing, water filtration, and sewage system that doesn't rely on magic and is fully comprised of technology that existed a millennium ago. Why? Because I wanted to run a sewer crawl RPG event but also wanted things to make sense.

So, actually... I think that's my favorite part. I'm someone who gets intensely interested in really random things, and this lets all that be productive.

Well that's a great outlook.

So while your program developed much of the geography, how did the the rest of this rich world end up getting built?

I think the important thing to mention is where that whole thing came from. I'd be really remiss if I didn't mention my two biggest collaborators on this part. It really comes out of a conversation I had with my friends Kevin van Ravenswaiij (who just adores game lore and sci-fi/fantasy narratives) and Daniel Morris (who was in Uni pursuing a physics degree). Kevin kept asking how we got from A to B and helped write some of the original nanobot war outlines when I went to run an RPG campaign in the world, and Daniel wouldn't stop complaining about my pseudo-science. Together, the three of us got together and figured out a basic backstory that kept everything grounded in realistic science (seriously—absolutely everything in this world now is based on science we either already have or are working toward and expect to achieve within the century) and also played upon believable tropes in interesting ways. It was important that we knew enough for all the connections to be understood behind the scenes, but not be so completely detailed that we knew every moment. It's history. Nobody knows what Abe Lincoln's last sandwich was, for instance. We just know the general lines that led to his assassination, and those lines get more and more vague the farther back it goes. So we wanted to know what was important, but nothing else.

How do cartography and navigation play into the world?

I think it's probably pretty obvious why Audhumla doesn't have a ton to add in terms of navigation; but, interestingly enough, the generator comes out of an initial cartography conversation. I'd sat down with a square of the world and done a *very* basic map, and... well, Kevin called bullshit. It wasn't realistic. Nothing made sense. After all, that was before it was even Earth—it was just some random world with magic. While I still maintain that it wasn't *that* bad, it led into conversations looking for more and more accuracy and detail and realism, until finally I did a first iteration of the generator... and the rest, as they say, is history.

Or, in this case, uncountable hours cursing code and hunting the internet for inspiration and tutorials.

Which, by the way, I should probably give a shout out to the /r/proceduralgeneration community, where I have been silently lurking for a few years. They do some awesome stuff, which just keeps pushing my own work further.

I still can't get over how cool that generator sounds.

Oh, man. It is simultaneously the most broken, buggy thing I have ever created, and also the most intensely awesome.

Any final thoughts on this impressive world you've created?

Well, I think because it's been the theme of my last few answers...

To wrap it up, I'd like to just throw out there to everyone that you can't be the specialist at every-thing. This whole project is the result of me trying to be the specialist everywhere, but ultimately all of my successes have come from finding someone who knows more than me, and leaning on them for guidance, inspiration, or collaboration on that thing they're infinitely better at.

And, other than that, thank you for having me.

Thanks for being here! This has been fascinating, since there's clearly such a huge amount of depth and care put into this world.

As I said: I'm not creating. I'm trying to get the Linking Book right so I can visit a world that I know already exists.

Thanks to Dylan for spending some time with me today and sharing a bit about The Fifth World with us. If you would like to share your world in an upcoming issue of Worldbuilding Magazine please email or contact us on Discord.

EXCLUSIVE: GREG & DAN CARTOGRAPHY

Interview *Cartography*

Interview conducted by Adam Bassett

Greg Shipp and Daniel Hasenbos are a pair of cartographers who, earlier this year, started a patreon together to provide new maps each month to passerbys and patreon subscribers each month. So far they've completed over a several unique pieces ranging from floating worlds to prisons.

The three of us spoke at length about their process, the tools of their trade, and some of their favorite maps from over the years.

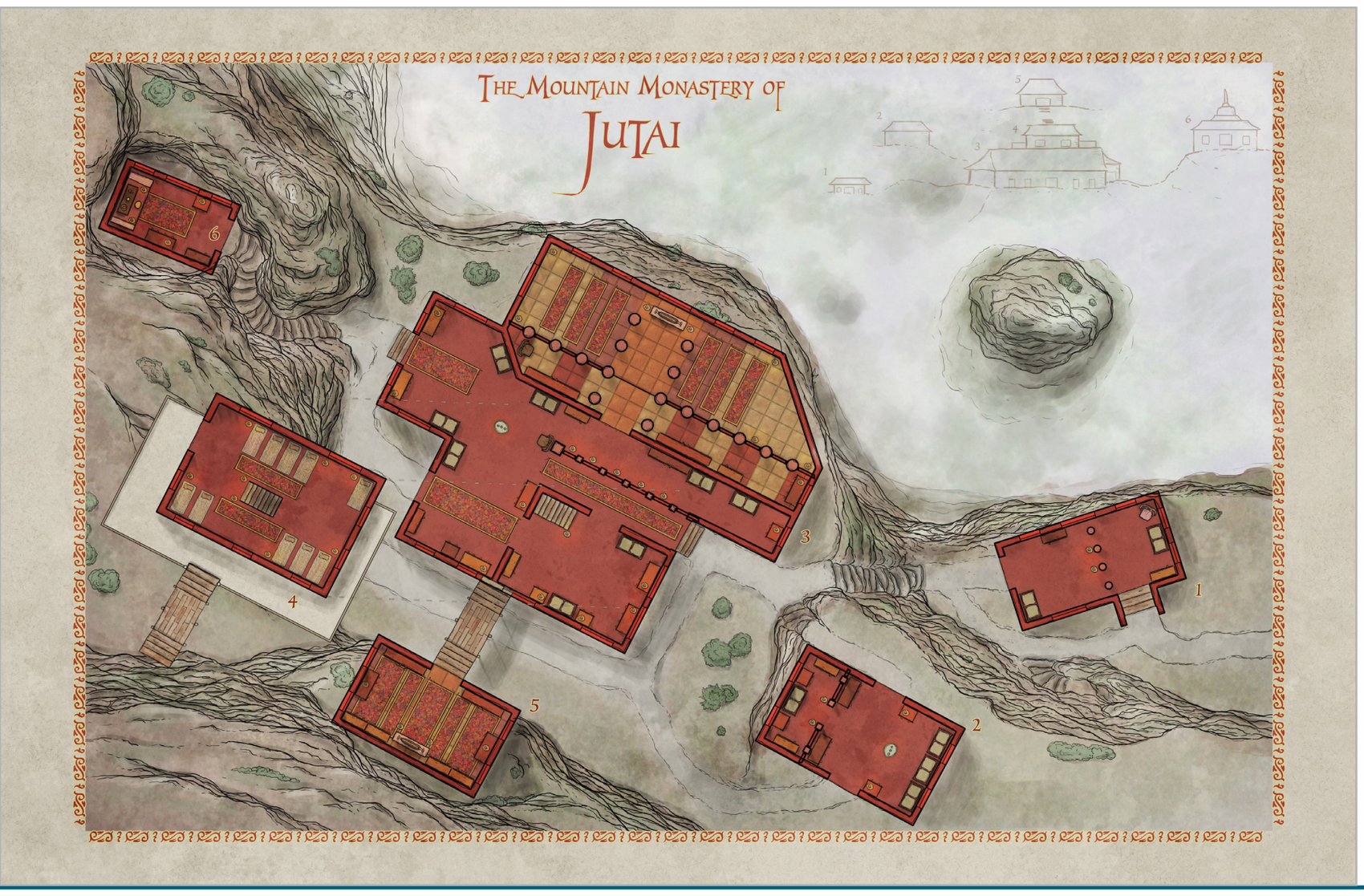
This is what Greg & Dan had to say about their work.

Greg: I first started in cartography a couple of years ago, during my final year of Uni. I studied film there, and whilst getting together a mood board for a piece, I kept seeing a load of vintage maps pop up in my search. I thought it'd be a cool thing to try and make so I looked up tutorials and that's when I stumbled upon the Cartographer's Guild which is a fantastic resource by the way. From there, it just took off. I enjoyed just making up my own little maps and trying out new things. I joined a DnD group who wanted a map so I made a couple for them. Then, really in whatever spare time I had, I just enjoyed being creative and trying out a few commissions when I could fit them in. Since Uni, I've really just been continuing that.

Dan: I'm Daniel Hasenbos, freelance cartographer from The Netherlands and I've been drawing maps professionally for a little over 2 years now. It all started about a decade or so ago when I saw Tolkien's map of Middle Earth. I quickly decided to make a map of my own, which became my first fantasy map. A couple of years went by just doodling and sketching until, in 2015, I decided I wanted to create something that looked like more than just some ideas put down on paper. From there I quickly discovered the joy of drawing maps, and about a year later I started my own work as a freelance cartographer, under the business Daniel's Maps.

Greg: At the end of 2017, I spoke with Dan about a Patreon page. I think we'd both been independently thinking about making one anyway, and we were both pretty up for the idea. We launched Greg & Dan Cartography in February/April of this year and it's slowly but steadily been growing.

Dan: Yeah, and we met each other in the Cartographers' Guild that Greg just mentioned. I pretty much ended up there the same way he did. At the moment I'm working on a couple of maps for upcoming RPG settings, as well as some for authors. One of those RPG settings is the Princess Bride RPG by Toy Vault, and the other one in the Lyonesse setting by The Design Mechanism.



Greg: Alongside the Patreon stuff we're doing, I'm currently working on a set of maps for an independent RPG guide book and am the cartographer over at Golden Goblin Press as well.

What programs do you use, and what's the general path you guys take to creating your maps?

Greg: Well, first things first, both Dan and myself use Adobe Photoshop for most of our work.

All article images by Greg and Dan

I also sometimes draw maps by hand, but not too often. Usually I color them digitally on Photoshop if that's the case.

Dan: Almost all of my maps are drawn exclusively in Photoshop from the start. I generally start with a rough sketch of the map and lay in some very basic colors. Then the “inking” starts. That's when I get my lines in. I make extensive use of layers. Everything goes on its own layer: coastlines, forests, rivers, mountains, terrain textures, etc.

When all the lines are done I start coloring the map. Mostly starting with the land and sea and then working my way down from mountains, to rivers, to forests, and finally icons, labels, and landmarks.

When all the colors are laid in I go on to add some shading and lighting (again, all on its own layers of course) and use different blending modes to achieve the desired effects (mostly 'multiply' for shading and 'screen' for lighting). At that point, the map is pretty much done. I generally add a texture on top of the map and add some finishing touches like rhumb lines in the sea, a compass, etc.

Greg: My first steps are pretty similar to Dan's. I get the very rough outline drawn out and plan the composition of the piece. I sometimes plan several compositions just as small sketches to see how different layouts might turn out (ie. title position, border, etc.). Once I'm happy, like Dan, I start "inking it in." I make new layers and put in the basic outlines of things: landmasses, forests, houses, mountains, or whatever's needed in the map. You could do this all in one layer, but that's the bonus of using Photoshop (or GIMP, Krita, or anything similar) because by keeping things separate you can fine tune them later. Erase parts of the forest without destroying the landmass, for example.

Once I've done the basic outlines I flesh them out further, adding detailing lines. These are everything from the peaks in forests to the ridge breaks in mountains, or the sea lines around the coast. There are also little things that can often be overlooked. One of my favourites is putting squiggly lines along the inside coast edges to boost the edges and give a bit of texture to take it away from the sea.

In a layer underneath all this, I'll add color in. Again, usually using separate layers for the different elements. This is sometimes blocked in and then built on top of to add texture using "Overlay" or "Multiply" layer properties. Shadows will be added over the color using a combination of those two layer properties, as that gives deeper shadows with "Multiply" blending and then subtle shadows with "Overlay." To break it down super simply, my process is:

- Rough sketch(es)
- Outlines
- Detailing (the most time consuming step, but one that really brings the piece to life when done well)
- Coloring/Shadowing
- Labelling (can happen whenever, really, but I usually do it last so it doesn’t get in the way when working on other stuff)

Good stuff. I'd also like to hear if you guys have any general advice for people who might be new to cartography.

Greg: A few tips for Photoshop mapping:

- Name all your layers and use folders. This makes things so much easier to organize.
- A graphics tablet is an essential bit of kit. I've made a few without but, mostly, it allows you to use pressure sensitive brushes that taper or disappear depending on how you press. Takes a bit of getting used to, but well worth it. I use Wacom. They have some affordable options available, too.
- Color can be hard to get right, but it's easy to experiment using the "Hue/Saturation" tool.
- Shading/Color: a pressure opacity brush is perfect to build up deeper areas.
- Try adding a texture. It's very quick but useful to boost the look of a map without too much effort. Do this by adding a parchment image/ textured look over the top in a new layer with the "Multiply" setting and a lower Opacity. It's quick and easy, but can come up with some pretty awesome results!
- Try different things. You can't go wrong and you can always undo mistakes.

Dan: What Greg said. Besides that, it's just advice that goes for all kinds of art: keep practicing, don't expect your first map to be amazing. With practice comes skill.

There's also lots of tutorials that are very, VERY helpful.

Are there any in particular that helped you out?

Greg: There are some great tutorials on the Cartographer's Guild, but I think what's even better on there is the community. Very friendly, and for those brave enough to post (don't be afraid!), you'll get some fantastic feedback. That's how I started, and I couldn't think of a better way to get going.

Dan: Exactly what Greg said.

Is there a world/map you guys most enjoyed working on?

Greg: My two favorites have been a personal map done for a challenge over at the Cartographer's Guild and also one for our Patreon page.

They came out looking better than I first thought, which is always a bonus! I think most of all, my enjoyment came from building up the lore

for these places, imagining the world and the way it works, and then communicating that through the piece. More explicitly with Olheim though, with its vintage style, layout, and lore extract.

Dan: Well, one world that I always enjoy is Hothachar, my own creation. It's the world that my first map was made for.

What I enjoyed most about these maps is that I had the absolute freedom to create it as I wanted. As I created the map it felt like I was slowly building the world as well, and as I went along, I got all these ideas of what people lived in that world. I must say though, every time I create something that I haven't done before, I enjoy it immensely. For example, I started out doing only political regional maps. It was a great experience when I did my first topographical map with hand drawn mountains and forests (something that I found very daunting at that time). Later on when I created my first town map, I felt very excited again.

Greg: Yeah, I agree with Dan. It's the excitement you get from doing certain maps, trying new things out and them going well. Sometimes, maps can drain your energy (city maps, I'm looking at you!), but equally it can be such a satisfying feeling completing it.

Is there anything you like to add to your maps just because you like it? For example, emphasizing your mountains or adding overly complex compass roses. Or do you just do what the project requires?

Greg: Sometimes, it varies from project to project and, of course, my brain. If I have a burst of inspiration to add an intricate compass rose in, I'll do it, but only if it suits the project and I have time.

That being said, I do love borders on maps (though I'm not necessarily good at them)! It's nice getting a border design that works well with the piece, be it really illustrative or very plain and simple. Borders can definitely make or break a map. For example, I really like how the borders turned out on my Olheim map.

Dan: I think I kind of do a cartoon-ish style with thick outlines most of the time, as well as use very muted or faded colors for my maps. However, I think it's more of a style that I developed rather than a specific thing that I like to put on maps. People generally hire me because they like the style of my work, so naturally I'll get asked for that style and then it becomes what the project requires.

One fun thing that I like to do though is whenever I have some creative liberty with coastlines I put in something that resembles the coastline of the Netherlands at some point.

Greg: I didn't know that, Dan!

Dan: Yeah, it's often very subtle, but it's there.

Greg: My quirk is that whenever I get the chance, I put references to my pets in maps.

Dan: That's nice as well! Didn't know that either.

So tell me a bit about the Patreon: Greg & Dan Cartography.

Dan: Generally, we pick a theme for each month and then we both make one map that fits that theme. That way the maps are often kind of related and can be used together.

Greg: Based on the theme voted for, we discuss what we want to do and sometimes bounce ideas back and forth about the maps. So we often have a bit of input into each other's maps, just not the actually creating part.

Dan: For example, this June Greg made a prison complex and I made a tile-set for an underground prison/dungeon.

What's the goal for these maps?

Dan: I think the maps that we're making for our Patreon are exclusively aimed at tabletop gamers.

Greg: We create a couple of maps a month that work well together, which at the end of the day could be picked up and used by a DM or whomever as part of a campaign. Pretty maps for people to play with.

Are they free to access, or do you have to be a Patreon member?

Dan: The low resolution versions are always free to everyone and included in the preview post. High resolution versions, gridded, labeled and unlabeled, etc. are exclusive to patrons, depending on their support tier.

Great! I'll have to check them out more later. Is there anything else we should cover, or go back over briefly?

Greg: I think that common mistakes usually come from a geographical perspective.

Dan: Also, think about where people might settle and how cultures may form. I won't pretend that I have extensive knowledge of geography or cultural studies, but it's a good idea to at least do some research into the subject before you create things.

Greg: Same here. You don't need to be an expert, but at least know some of the basics. You've got to know the rules first, *then* you can break them.

I ask for some final comments and you go tell people to break the rules.

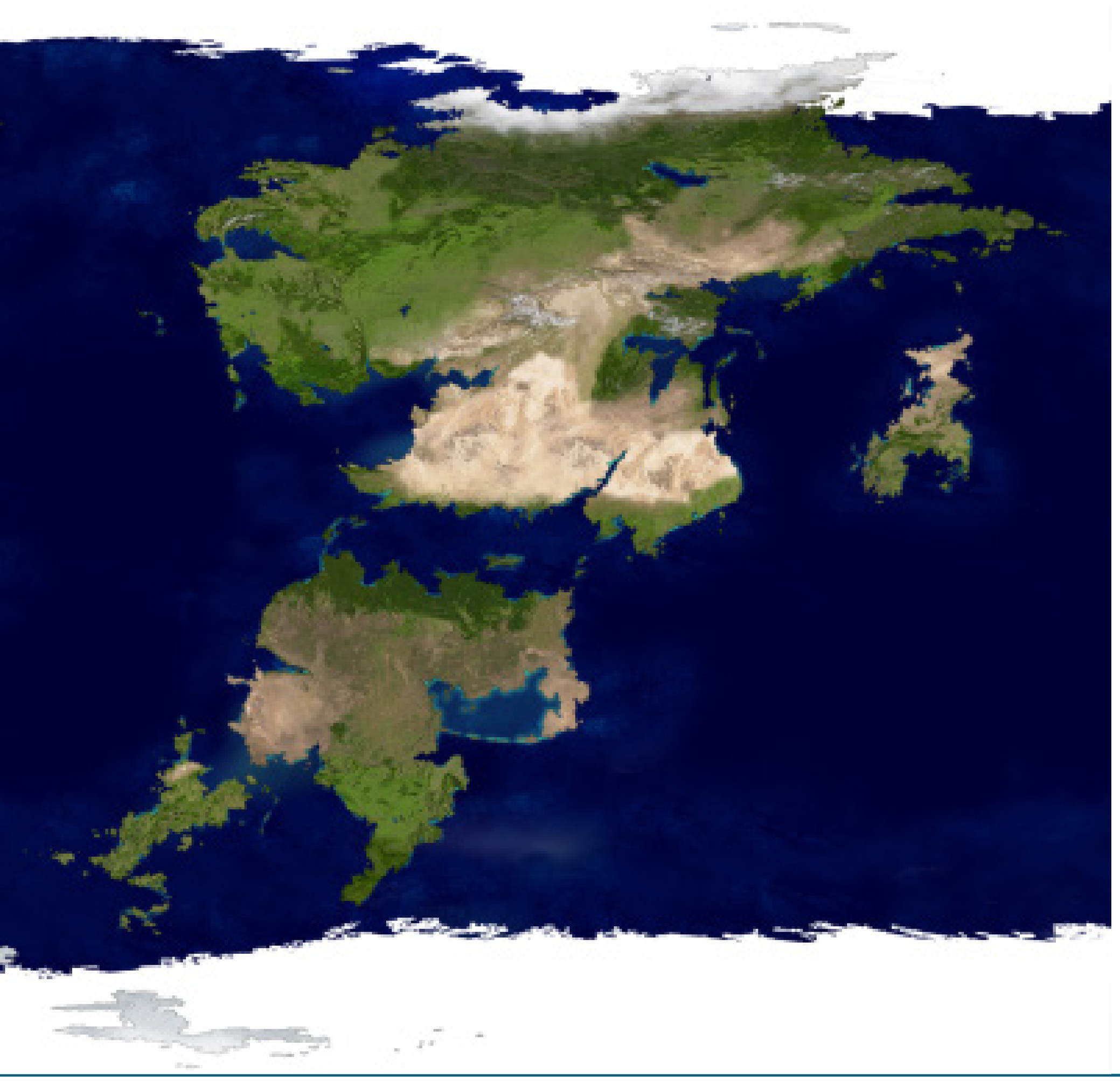
Greg: Yup.

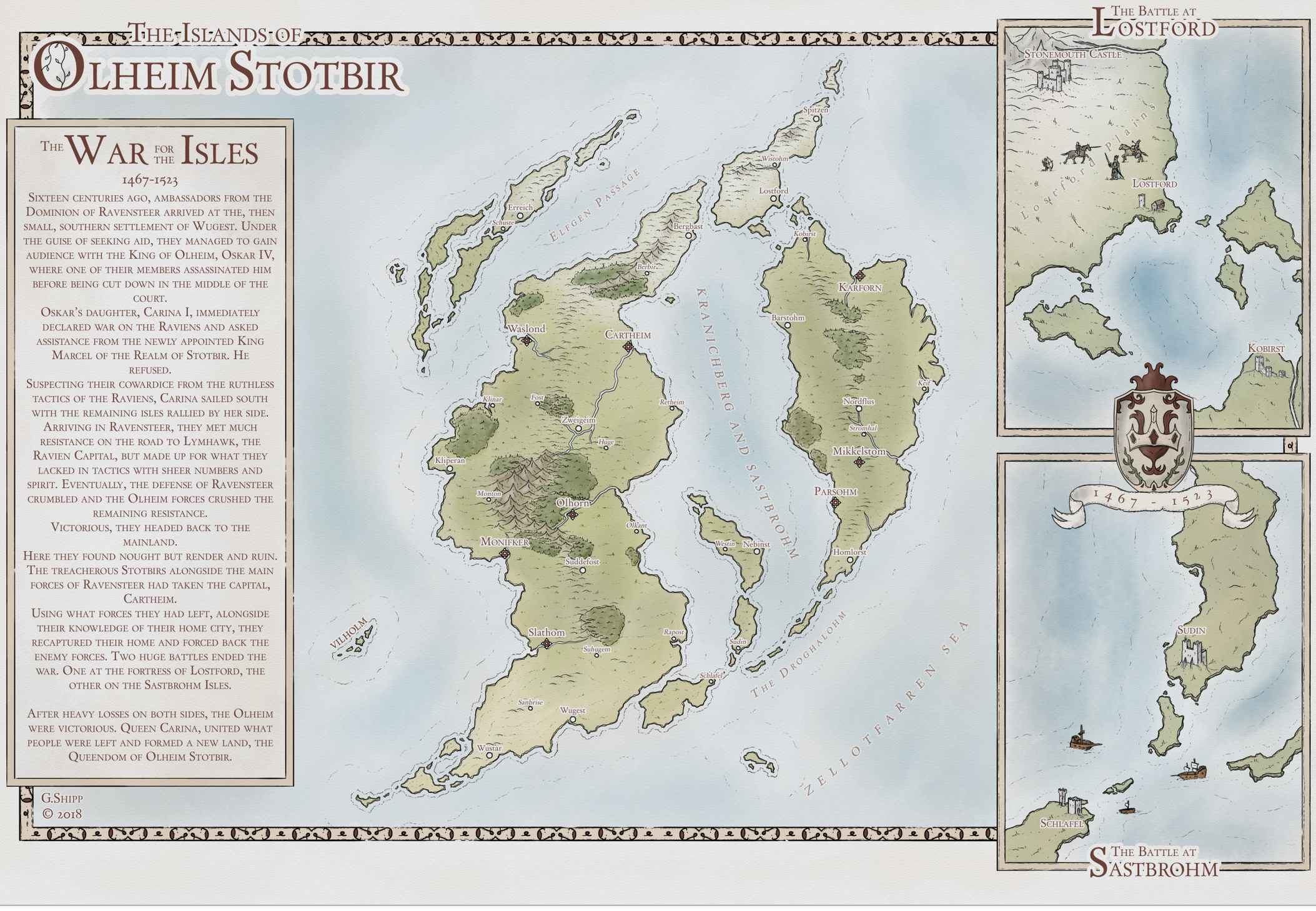
Alright, so you both already mentioned this a bit but if you don't mind, I'd like to hear more about your inspirations. What got you into cartography, and what continues to inspire you?

Greg: I thnk the *Edge Chronicles* were a huge inspiration for me. I didn't know it when I was reading them, but I think the maps and world in those books seeped their way into my brain and are probably the reason I enjoy maps and world-building so much.

My inspiration comes from lots of places. Other cartographers, be them historic, realistic, or fantasy. I'm inspired by Dan's work and many others on the internet. Video games as well, such as *The Witcher 3*, *Pirates of the Caribbean* (the original Bethesda game, not anything to do with films), the recent *Uncharted 4* (absolutely beautiful design work in that game), and I'm currently playing *Alien: Isolation* whose attention to detail is staggering and inspiring in its own way.

Dan: As I said earlier, it was Tolkien's map that got me to draw my first maps. At that time, I wasn't aware that there were more fantasy maps, let alone that other people liked to draw fantasy maps, so I kind of kept it to myself and started to slowly create a world. Then when I wanted to improve my maps, I decided to google "how to draw fantasy maps." This brought me to the aforementioned Cartographers' Guild, where I was overwhelmed by the skill of the people there, and still am today. There are a couple of people who have been drawing maps for years, but every now and then a newcomer with great skill comes around and surprises everyone. It's those people that inspire me. Every time I see a map that I like or even love, I try to find out what it is that I love so much about it and muster that technique to improve my own work.





Greg: Perfectly said at the end there, Dan. I think the same goes for anything you like. Films, music, video games, books. Whatever it is, it can inspire creativity in the most unexpected ways.

Dan: Also, since I started working as a professional cartographer, I have worked with a lot of people. Each time it's like helping someone bringing their world to life, and that feels amazing!

Where would you like to see the Greg & Dan Cartography, and your own projects, in the next few years?

Greg: I'd like to see our Patreon continue growing and get a real nice number of followers. It's been great seeing it all come together so far, and it's exciting that it keeps growing: our own little adventure with plenty of people coming along for the ride.

I don't know where I'd see my own maps in a few years. It'd be nice to have some published in large publications or a best-selling novel, or used as part of a major game, but it's impossible to know. Looking back already, it's nice to see how much I've learnt in the past couple of years and how much my maps have developed. I think that in a few years I'd love to see that change again. I think as long as I'm still enjoying making maps, and still bringing my worlds and other peoples' worlds to life, I'll be happy. For me, it's all about staying creative, keeping fresh, and enjoying the process. And if that's all there, I don't mind where my maps are.

Dan: What I'd like for our Patreon page is to gain a nice and active following and community. As our page grows, we'll be able to put more time and effort in it. I would love to bring people together and have them be part of our creative process by letting us know their thoughts and ideas. We're still a small page, but each milestone we've reached so far gave me a boost and made me want to get this to the next level.

As for my own cartographic adventures, I'm working hard to always improve myself and take on bigger challenges. I'm actually expanding my work and experimenting with illustration in a wider sense at the moment. I would love to start doing some concept art in the future as well and maybe even deliver all the art for a setting; drawing all maps, environments, and characters. By drawing maps I can bring worlds to life. Maybe in the future I can do the same for people! I think what it comes down to is that I'm always looking for new challenges and new ways to develop myself as an artist.

We would like to thank Greg Shipp and Daniel Hasenbos for taking the time to be a part of this issue of Worldbuilding Magazine. You can find them

working cooperatively on their patreon, Greg & Dan Cartography.

Greg does his own work at https://www.lostinmaps.co.uk/, or follow him on DeviantArt.

Dan does his personal work at https://www.danielsmaps.com/. You can follow him on Facebook.

Greg & Dan's Mapmaking Tips:

Think about the map's purpose. Do you need intricately detailed forests, or just placeholders that players can see? Usually you can strike a balance between these, but don't get bogged down.

Think about where people might logically settle, such as on a major road for the economy or on a peninsula for protection, and how cultures may form there.

Join the Cartographer's Guild!I think it's *the* place on the internet for friendly, creative inspiration, and advice in all varieties of mapmaking.

Get someone else to look at it for you. It's amazing what little things can be missed.

Look at maps you like. What makes them work? How has the cartographer approached portraying something? Try it out yourself.

Try something different. There are so many varieties of maps out there. Sometimes if you're stuck for inspiration, just try doing something new and you might take influence from it.

Practice. Don't expect a masterpiece first time round. It takes time to get a feel for how they should be. Do small pieces, try out new things with them.

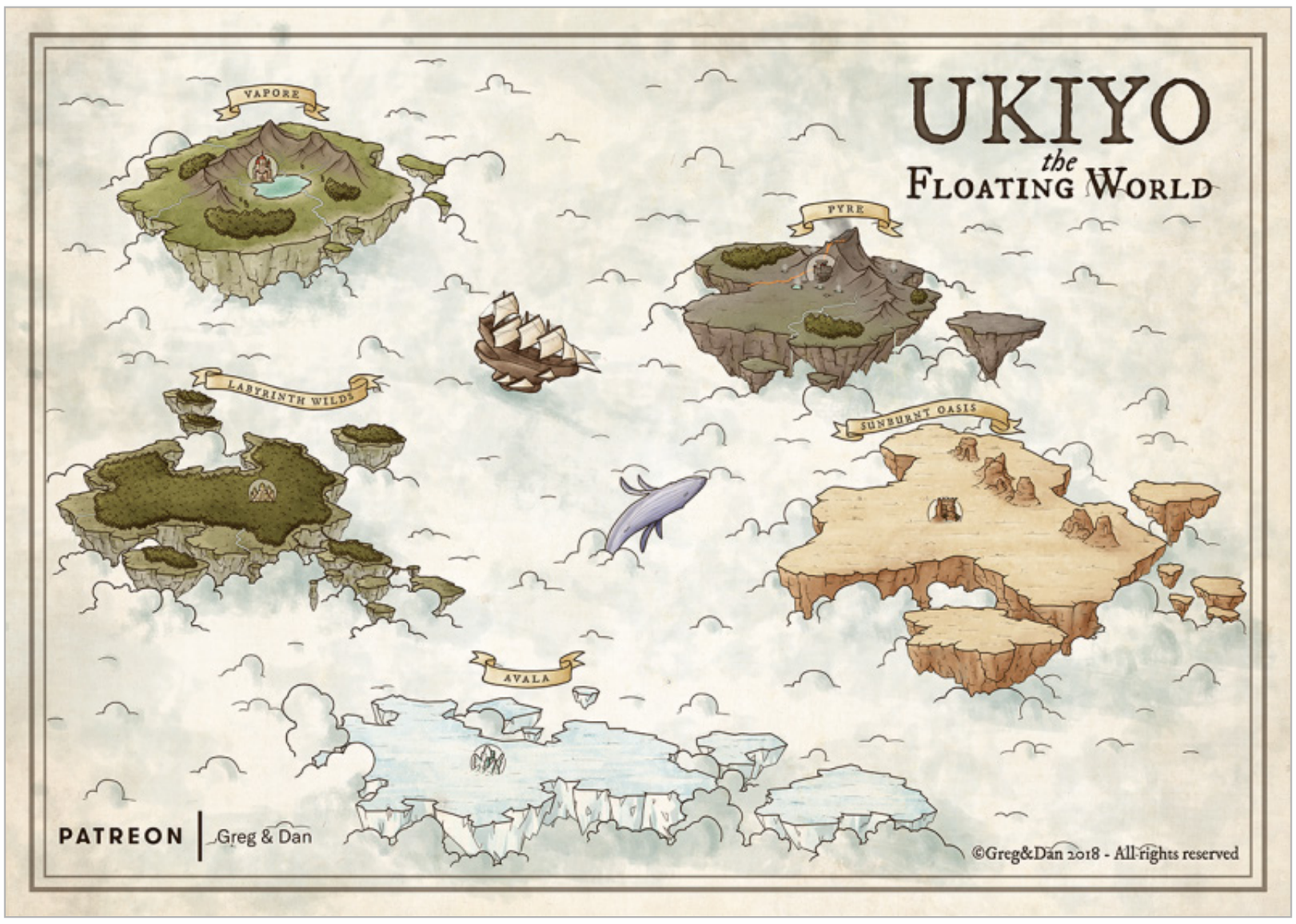
Common Mistakes:

Rivers. Unless you absolutely need to, don't have rivers splitting randomly. Have them flow from a source/sources, perhaps converge into a larger river and end up in a lake/sea. Very common to see, and often looks really weird.

Biomes. Deserts shouldn't run straight in lush grassland. Mountains don't sprout from nowhere. Unless you've got the lore to support these things, there's no point making up weird geography, as it just looks weird.

Not planning. Planning is essential to avoid mistakes later. Even just small sketches to start with are your friend. If you have an idea of what you're doing, the style you're after beforehand, it just gives that extra focus to it all.

Breaking a theme. There are loads of approaches you can take with different elements (eg, with mountains, you could draw them top-down, isometric, side-on, or even just as contour lines – and many variations even within those). All are fine, just make sure whatever you try, try to keep the rest of the map in theme, so you're unlikely to put contour mountains with lush isometric trees which might look odd. Equally, there's no harm in experimenting; it just might work a charm.



Making your canvas too big. This is mainly for digital pieces, but it applies to hand-drawn too. Unless you know exactly what you want, too big a canvas can be daunting and you may end up giving up on a piece before getting near finishing. Start smaller and work up to bigger pieces once you're getting the hang of things.

SEEING THE WORLD THROUGH A DIEGETIC MAP

Theory and Analysis *Biology*

Maciej Aureus Gajzlerowicz

Map design is at the heart of the worldbuilding tradition, and many designers want their maps to communicate the most important information at a first glance. First, you could outline some continents and mark the mountains and maybe some larger rivers. Then you can figure out where the deserts and forests are, spread some islands, make shorelines more interesting, and finally jump into making more detailed maps of your favorite kingdoms.

Some worldbuilders stop here and focus on the quality of their graphics, giving them unique visual style. Others pursue much more complex details. There is quite a large set of realistic maps made with the same tools as the modern maps of Earth. It's quite amazing that we can now create accurate tectonic plates or wind directions.

The majority of these maps are non-diegetic — they objectively portray the world, but are mostly for the convenience of the reader, player, or the marketing department. This approach is so familiar that even fantasy maps are usually extremely accurate and reliable. The communication between readers and writers is traditionally based on trust, and using a picture to misinform the audience without an appropriate setup is nothing like a well-planned red herring.

Many maps are meant to portray reality as is and play the role of an objective guide. A national border is a national border. Mountains and rivers are where we say they are. It is often overlooked that many fantasy settings have not reached the technological level that would allow them to create maps to such a high standard of reliability. The history of non-fictional cartography shows that the world is too large and complex to describe through intuition alone, even for an experienced traveler. Exploring the world requires advanced technology, and designing a coherent system of visual signs needed to create easy-to-read maps is something that requires centuries of experimentation, data-gathering, and a significant level of literacy.

If a sword and sorcery world has a complex, geographical map that tells the objective truth, it doesn't matter if it has serpents drawn in the middle of an ocean, blood stains in a corner, or symbolic miniatures of the forests. However, great visuals are not a relevant indication of a map's diegesis. Maps are tools, and showing the truth is not the only thing they are good for.

Diegetic maps are a part of the setting itself. They are made by the world's inhabitants and could even be considered props. These maps don't present an abundance of objectively valuable information since they are made by a fictional character, usually not a competent artist or cartographer, for a very specific purpose.. At a glance, they often appear vague, even lazy and therefore useless — though they may look cool.

It is important to understand that the purpose of making a diegetic map is not just to be vague for mystery's sake, nor is it to simply portray the world. The purpose of making a diegetic map is to portray how the world is seen from the perspective of its inhabitants — or maybe even their culture in general.

If a map was meant to provide knowledge, we need to ask — what sort of knowledge? Medieval maps of Europe often prioritized religious or mythological meanings, while the old Arabic maps prove that even an academic and accurate map can be beyond comprehension for a casual observer. The 16th century is arguably the one during which the the visual language became advanced enough to create maps that can be understood, though they are still filled with text.

The complexity of maps made them a discipline reserved for clergy serving rich collectors from the upper classes. It opened the gates for high-budget, colorful and long-lasting pieces of art that survived for centuries. However, we can only imagine that maps made for or by a traveller, a commoner, or a person with little time to spare would never reach the similar level of artistry, especially since they were made for minor, daily tasks. Instead of being drawn on expensive parchments, they would be

Image by deificat

sketched on a dried piece of skin with some charcoal or scribbled on a wax tablet to be updated when necessary. These maps were not meant to last but rather to convey the information needed here and now. Simple mapmakers don't really need to ask themselves if their work will be easy to decipher after decades or centuries.

Not only that, but maps always become obsolete. A non-diegetic map is usually made to represent how the world currently looks. However, the diegetic maps represent the reality known to the mapmaker or their informers. As a result, the more time passes, the more inaccurate the map becomes. In a fantasy setting filled with powerful magic even the coastlines can change their shape in a course of a single generation. Limiting the area one tries to portray will usually allow to convey more accurate and specific information, though such a map becomes temporary and vulnerable to changes. A non-diegetic artist will create a map of ruins. A diegetic artist creates a map of a thriving city not knowing that after fifty years a group of heroes is going to use the same map to explore the ashes.

Non-diegetic maps are usually easy to understand and their embellishments are meant to be a cool addition, not a distraction. Even a mapmaker with limited artistic skills will prioritize readability, limiting the colors and shapes by choice, not necessity. By contrast, a diegetic map is made by a fictional character who probably tries to figure things out on their own with little to no reference points and without convenient tools they could wish for. Beautiful non-diegetic fantasy maps are meant to be easily understood by anyone, to lure the reader in, highlight how interesting the setting is. Diegetic maps, on the other hand, are most likely not well-established in their respective cultures and reading them is quite a challenge. Representing information through images alone is so difficult that Medieval mapmakers had to fill their work with paragraphs of explanations.

Does the world have another continent? Your mapmaker may not know about it. Did you put a lot of colorful, complex cultures in the South? Well, your cartographer will probably just note "barbarians" and move on. Do some kingdoms fight with each other for years? You probably won't find their national borders on your map.

As we can see, to make a truly diegetic map one must answer numerous questions. Who is the cartographer? What is the map's purpose and who is meant to use it? What are artist's restrictions? What tools do they use? What information are they lacking? One of the arguably greatest examples of diegetic mapping can be found in the first Thief game. Its maps are mostly sketches based on what little offered to you by your informants who sometimes know a lot, sometimes know only a bit. They are not pretty, but why would they be? And even though, for example, other games can use maps with similar color palette you can easily spot a difference between an objective source of accurate

information and something that is a part of the world itself.

What a diegetic map doesn't convey is just as important as what it does. The assumption that the fantasy realm with swords and castles could describe and portray the world without mistakes and biases is very optimistic. Though, who knows — maybe you have sorcerers that used a *Remove Fog Of War* spell and maps are very detailed and common. A high fantasy setting is never obliged to follow the logic of our world.

In worlds with advanced technology it's much easier to consider scientific maps diegetic. It's not only clear how these maps were made, but also who would want to make them like that. A modern, advanced society needs objective information to prosper, and the scientific world often tries to separate itself from politics. Though, of course, the decision to make or not make, for example, a map of religions is already telling quite a lot about the world.

> *What a diegetic map doesn't convey is just as important as what it does.*

While we can giggle watching the cryptic, old maps with lions and dragons, pictures like these provide a lot of valuable information about the culture expressed by the mapmaker. Making a diegetic map means to acknowledge how difficult it is to pursue the information in the created world. It's a gateway into a different mind, just as valuable as the popular elements of folklore — poetry, songs or legends.

Image Credit: Slawomir Woznicki

CARTOGRAPHY IN A DUNGEONS & DRAGONS CAMPAIGN

Cartography *Tabletop Gaming* *Theory and Analysis*

Ianara Natividad

When I began my first serious foray into worldbuilding, I focused on mainly abstract concepts like world histories and characterizations of notable figures. As the world grew, these details required locations and descriptions of areas. To me, however, maps were a profanity—a four letter word not discussed in polite company. I actively avoided having to focus on geography or physically mapping out facets of my world because my writing lacked cohesiveness in geographical proportions, landscape, or terrain design. Translating those aspects into a visual medium like a map seemed overly cumbersome and challenging for me, yet I could appreciate seeing the fictional maps created by other people despite my aversion to making them. Prior years of playing tabletop role-playing games (TRPG) exposed me to map-making and its utilization. Most importantly, my experiences in playing and running *Dungeons & Dragons* (D&D) campaigns also made me more knowledgeable to the usefulness of cartography for a player and a Dungeon Master (DM).

In D&D, I mainly use two types of maps: battlemaps and political maps. Battlemaps provide the backdrop for combat encounters in my campaign; they may amount to little more than lines on gridded paper or detailed top down images. Players and the DM use these maps to make strategic choices, such as positioning characters during combat or taking advantage of present terrain (sources of cover, elevation, environmental hazards, etc.). From a worldbuilding perspective, the way a DM designs a battlemap can convey context for a given combat encounter and establish the physical appearance of their setting. For example, as a cultist makes a sacrifices to an ancient power, the PCs look to the altar and spot a strange symbol, their next step to uncovering an obscure but vital clue. Perhaps a dungeon the players explore possess a unique structure that reflects the architectural style of the area, possibly in the present or in a time gone by. These instances have aesthetic details that can be depicted on battlemaps. Players may instinctively adjust their mindsets towards combat whenever the DM presents them with a combat encounter; however, the time players spend looking at a particular battlemap provides a reliable and variably subtle way of exhibiting visual nuances of the world.

The second type, political maps, I utilize purely for contextual purposes. When I decided to run a dedicated D&D campaign set in my world, I had to prepare resources and cater my worldbuilding according to my players' needs. The player characters (PCs) would inevitably travel to and explore certain locations of my campaign world. I knew I had to prepare these areas while still keeping my worldbuilding flexible for unexpected occurrences or events enacted by the players. Thus, my focus went to designing the locations I thought the PCs would spend most of their playtime.

I wrote paragraphs detailing settlements, political borders, and geography. However, when running DMing, a purely narrated description of the terrain and landscape relied on players dedicating their attention span to me effectively reading those details off my notes. There was no guarantee how much players would retain information presented in large chunks nor did I expect my group to memorize a world I had spent days building up for them. DMs must find a way to present most of their ideas in a concise and coherent manner. My players needed something concrete, engaging, and easy to refer to. I needed to make a map.

My ideas for the future were nebulous during the early portion of my campaign. I possessed the narrative groundwork through what I had already written for my world, but I avoided presuming that players will touch upon all prepared content, if any. Furthermore, creating entire countries or regions with appropriate details took time and effort, and a DM having to include such information in their

presentation adds significantly to that load. While designing my first official campaign map, I applied Alfred Koryzbski's idea from *Science and Sanity* that "a map is not the territory" (750). This expression describes the relationship between an object and that object's representation, also known as the map-territory relation. For a worldbuilder's purposes, the statement means that the information displayed on a piece of cartographical work does not entirely convey all the details contained within the area it represents.

Since I had already written a narrative starting point for the setting, I created a political map portraying the entire continent of Varia. I did not have a sole direction for my game, though I knew for certain that continental war, politics, and organizational intrigue would play a notable part in the proceedings. With those criteria in mind, I outlined borders of territories controlled by major factions and color-coded them on my map. Established nations had solid outlines whereas territories captured during the ongoing war had blurred edges to represent the geographical disputes in those areas. Since I wanted to convey the enormity of the continent, I also added a scale to give my players a sense of the conflict's reach and the distance they had to travel in their adventures. However, due to the sheer size of Varia and my uncertainty in what areas my players would choose to travel, I refrained from depicting certain details. My political map remained void of geographic features barring major rivers, and I only included markers for famous or campaign-relevant settlements.

My mapmaking followed a functional approach that did not produce a very aesthetically pleasing piece of cartography. I intended to avoid visual clutter while giving a concise image of the setting's political state. Throughout the campaign, I remained mindful of the PCs' knowledge and the passage of time in the world since they began adventuring. I then adjusted the territorial outlines and added labels for settlements as the characters became aware of them. After over a year of running the campaign, I still used the map to calculate travel times. Cartography helped me set a framework and a precedent for the value of time in my game by showing the hardships and efforts of travel. Though months of in-game time had passed, the map still looked sparse compared to the actual area of Varia depicted, but I had conveyed my message about the continent's political state. Still, the map possessed much potential for changes to further build up my setting in an easily accessible and relevant manner to my players.

A DM, or any worldbuilder, may find creating a comprehensive map a daunting task, especially when paired with the desire to present the piece to a particular audience. However, Korzybski's statement focuses that effort. The DM should cater their work to the campaign's purpose. If they want a game about natural exploration, then a useful map for the campaign and the players would include notable geographical formations, indications of biome and terrain, or climate patterns (among other characteristics). In an adventure set in an urban environment, the DM should instead provide a map that outlines a city or other settlement; this map may highlight notable locations and hint at the relevant industries of the area.

Regardless of the setting style or the approach, one should not get stifled by the prospect of imperfection or incompleteness. Unless a world has been fully detailed, a worldbuilder may add more information to any map. Cartographical works can serve as frames of reference for further worldbuilding, especially if the design of the map is meant to convey a particular tone or theme of the setting. Nuances can be added to visual imagery, such as in the shape of a map or how features of it are detailed, that are either difficult or impossible to achieve in just written work.

There are also ways to justify maps that are either inaccurate or incomplete. For one, the cartographers within a world may not have the means to create fully detailed works, or perhaps the mapmakers' perspectives altered the representation of reality. In a campaign, PCs will experience the world through a particular lens. While uncertainty is not always helpful for players, cartography provides narrative flexibility by helping shape their sense of reality for the setting. A map that lacks finer details or contains geographical inaccuracies (as seen with this real-life example of Ptolemy's world map, circa. 1407) may reflect a society's technological levels or experience with navigation. Roughly depicted portions of a map or places left unexplored provides a sense of unknown that the peoples of an area can share with PCs. Thus, the players' perspectives change according to the

information provided to their characters and the knowledge of the figures around them.

Consequently, players will alter how they interact with the setting based on how their characters' knowledge develops. They may inquire about why people have not explored or settled a location. Some can even ask, "How can we get to this unexplored area?" This single question opens a rabbit hole of narrative and worldbuilding opportunities, from the means of travel to creatures for PCs to encounter on their journey. Using the details (or perhaps lack thereof) extracted from maps, players will ideally synchronize mindsets with their typically adventurous characters. The points of interests or mysteries represented can lead them further in engaging with the setting. Through maps presumably designed by in-world figures (which usually lack in complete detail), the DM has a tool to shape their portrayal of the world beyond traditional written or spoken narrative. Cartography can doubly serve as a chronicle of changes to the world from both the perspective of a worldbuilder and its fictional denizens.

On the meta level, maps serve as an asset for any DM or worldbuilder. They act as records of the world while establishing standards in geographical size, terrain, and travel distance. One could also cross reference written information on their world with what they portrayed on a map to test accuracy or fidelity to their worldbuilding. Furthermore, the audience for the setting, from readers to TRPG players alike, also benefit from having a visual medium to receive information. When DMing a campaign, using cartography as a source of in-world perspective adds another dimension to immersing players in the setting. There are many ways to apply cartography as a means to detailing a world and presenting that setting to an audience aesthetically, succinctly, or both. Any worldbuilder should consider it a worthy tool that can be simple to apply but difficult to master.

Glossary

Tabletop Role-Playing Game (TRPG) - a form of role-playing game wherein groups of players create characters and describe those characters actions via speech or writing, often within a given setting.

Dungeons & Dragons (D&D) - A fantasy tabletop role-playing game typically played in a group of two or more people.

Campaign - A string of consecutive and often related events conducted in sessions of tabletop games, such as D&D; sometimes collectively referred to as an adventure.

Dungeon Master (DM)/Dungeon Mastering (DMing) - A player responsible for managing, and possibly creating, the rules, story, and world's occurrences in D&D.

Player Character (PC) - The in-game representation of the players, aside from the DM, in a campaign.

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MAPPING AURORA: AN RPG CASE STUDY

Cartography *Fantasy* *Tabletop Gaming*

Cathy, the Overprepared GM

When I built my world, I started smallish, fleshing out a single culture and lavishing attention on the national map. I took the time to get the scale right, establishing a travel time of ten days as a constraint first. With that number decided, I mixed in my desired historical influences, extrapolated the physical geography, determined the population distribution, and finally set the political boundaries.

Image by Tristen Fekete

I also created smaller maps for specific adventures. The city map for the capital helped the players hunt down a missing nobleman in the campaign kick off session. The hill fort map allowed the players to investigate the mystery at the heart of the first major adventure. The blueprints for the ominous keep organized the dungeon crawl in the heart of the fens. After I had fleshed out all the low-level cartography, I moved outward, firming up the neighboring nations so that they could explore more advanced stories involving international travel, exploration, and politics.

It was easy to figure out what maps to create and what to put on each of them, because traditional maps are such a well-explored space in terms of information design. If my players are traveling or discussing things on the national level, I can just open any atlas and see that the big national maps have national and district boundaries, settlements, natural features, roads, and other points of interest. If my players are adventuring in a settlement, I can look at city maps to see that they have elements like important buildings, streets, districts, and waterways. If they need to see how a building of any size is laid out, I know that it needs to be organized by floor and depict rooms, walls, hallways, doors, and major furniture.

Regardless of scale, maps always serve a few broad functions:

Navigation. They show points of interest as well as navigational routes so that players can plan where they're going and how they'll get there. Depending on the scale, the routes and points of interest may be anything from wormholes and planets to hallways and rooms.

Reference. They act as a reference for important locations that the player needs to remember. By displaying it visually, a good map can indicate relationships, improve memory, and give details about what each element is. For example, cities, mountains, rivers, forests, monuments, etc. all have established conventions for how to show them.

Atmosphere. A good map also evokes a clear sense of place. For example, a player will have a sense for terrain when they see that their path takes them through a mountain ridge. They may have to hike through a tumbled set of foothills, scale an inaccessible and ice-capped top of the world, or traverse an unexplored jungle menaced with active volcanoes. Perhaps the players only have to tread a well-traveled trade road with inns and villages along the way. The map helps the group feel immersed in the world and roleplay better. They can look at it and make their own choices about which path to take and what preparation they need to make before setting off. Players can anticipate the types of challenges they'll encounter and the amount of time it will take. Maps also help me stay consistent with how I present the world to the players.

As long as I only needed to chart a world with geography similar to ours, the cartography remained straightforward. It wasn't trivial, mind you, but the challenge was in doing it **well**, not in figuring out how cartography works from first principles. However, my campaign planning for later levels had them traveling beyond their home plane. I needed maps for higher level adventures that filled these same roles in navigation, reference, and atmosphere that blueprints and national atlases had in lower levels.

This expansion into the multiverse challenged my cartographic skills. I wanted the planes to truly feel different from each other, with locations in each world that simply couldn't exist in the others. But that meant I was creating some really bizarre planes. I needed to start from those fundamental principles of design and figure out how to apply them to new circumstances.

Fluidity

The first issue I wrestled with was the fundamental nature of Aurora, a plane dominated by the goddess of spring, youth, the arts, and inspiration. Since birds were sacred to her, I decided to make it a plane of air with flying denizens. I imagined floating islands with localized gravity whose buildings and streets encircled giant boulders. The roots and branches of epiphyte trees gnarled together to form giant, floating cloud forests. Migratory flocks of alien creatures shaped like blimps and squids and jellyfish traveled long circuits between the cloud forests. In between areas of no or light gravity were sinks of higher gravity, pulling in accumulations of detritus over time. Technological cultures harnessed kinetic energy by using things comparable to waterwheels or windmills. Native species all fly, float, or cling with ease, and even human visitors could float clumsily from place to place. And winding through

it all were the jet streams, unceasing wind that would push everything in regular paths. Travel from place to place within Aurora would involve both moving within a jetstream and hopping from one stream to another.

For my players to travel through the fluid space of Aurora, they would need a useful map. I ran into an immediate problem while planning: I wasn't sure how to draw locations that changed relative to each other. National boundaries didn't make as much sense in a place where everything moves. How could I depict the political organization of people without political boundaries? I started by trying to find real-world analogs of maps that dealt with air currents and then started thinking about other fluids, hoping to get new ideas.

I found one common approach that I called the colored, vector-lines approach, such as this

As much as I love JPL's approach, it still was not quite what I needed. As with all graphics of currents, this one focuses on showing the currents with respect to the landforms around them. This indication is crucial on Earth because that's how we establish context for location. And location is why we use maps. However, I was trying to depict a world that has no landforms, so I needed to remember that JPL design and keep looking for ideas.

My search lead me to gas giants projections, like this flattened one of Jupiter, which is comparable to a mercator projection of Earth. Unlike with Earth however, it shows that the structure of Jupiter is composed of bands of currents. Jupiter's winds aren't influenced by landforms, so their structure is formed by the spherical shape of the planet, the force of gravity, and the Coriolis

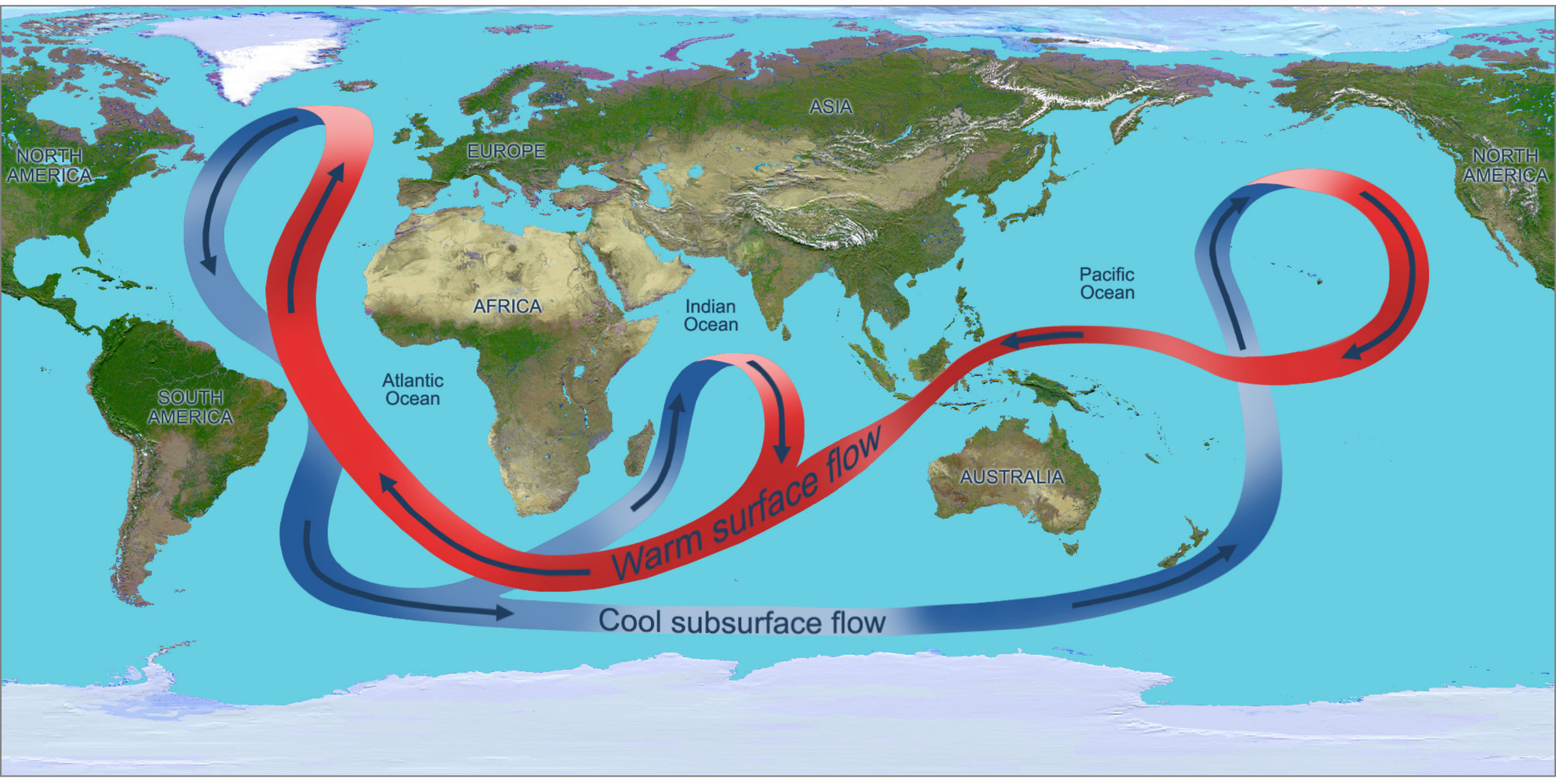


Image by Nasa Jet Propulsion Laboratory

picture of the Jet stream or this one of ocean currents. It shows location, direction, temperature, and strength of the currents by using colors and arrows. The visual worked and it's an established approach (so I'd have lots of examples to learn from), but I think I prefer this image created by NASA's Jet Propulsion Laboratory (JPL), which uses what I termed the flat-ribbon style. This approach shows location, direction, and temperature, and the simplification makes the overall flow much easier to grasp.

effect. That made sense to me as a way to envision Aurora. I could see it as a world with disjunct air currents that have rough, turbulence between them. Technologically savvy cultures could set up windmills along the borders, utilizing the constant relative wind as a source of unending energy. I could show each band as a self-contained linear graphic. Political boundaries would take place naturally within bands, but some empires might colonize into nearby bands the way Earth empires have had colonies in different continents.

Seeing the Eye of Jupiter also gave me the idea to put similar giant storms in Aurora. They would form an almost impassable obstacle in a band. The truly colossal ones might push the turbulent boundary outward, compressing everything nearby so that the currents would flow fast and narrow for many layers of neighboring regions.

The bands would travel at different velocities, so if I wanted to set specific speeds for each one, I could figure out the interval between the alignment of each pair. As a GM though, I probably wouldn't do it. If they needed to go from a place on one band to a place in another band, I would just decide on the spot how long it takes for those locations to line up again, based on where I want the story to go.

With those decisions made, I had an approach for drawing a map (disjunct, flat bands of different lengths that connected east-west) and the list of elements for which I needed iconography:

- Turbulence regions
- Storms
- Cloud forests
- Boulders (including those with settlements)
- Free-floating settlements
- Gravity-induced collection spots (and a way to indicate strength.)

Then it occurred to me that, in a plane of air, points of interest could float at different altitudes. In fact, entire bands could overlap, flowing at different heights and winding among each other like individual noodles in a bowl of spaghetti. And that's the next complicating factor.

Overlapping Altitudes

The more I considered the problem of depth and altitude, the more I realized I was going to have to deal with it in a number of situations. Normally maps are projections. They take the surface area of a three-dimensional object and spread it flat so you see the entire surface at once, even if you stretch or squish parts of the surface or make cuts to spread it out. Imagine the surface of Earth being a skin, and we just take it off the world and lay it flat, taking the surface of the sphere and spreading it onto a flat planar area. In a typical map projection, we ignore anything above or below that skin.

However, with Aurora I was looking at a situation where I really needed all three dimensions. On any given latitude and longitude, there might be a handful of different points of interest at different altitudes. In a typical world, they'd be above the "skin", and I would ignore them. For Aurora, there was no skin. There were just the immense overlapping air currents piled on top of each other and winding like a nest of serpents. If I flattened it like a typical projection, points of interest would overlap, turning the map into a confusing mess.

So I tried to think of other situations where people dealt with three-dimensional objects in a two-dimensional way and ended up finding a lot of different approaches. Some of the more useful image types were blueprints, engineering drawings, subway lines, cutaway views, and exploded view images. Jet stream diagrams helped me understand the height issue as well, because what's going on in the upper atmosphere isn't always the same as what's on the ground.

I got lost down the rabbit hole looking at various images, but eventually I extracted some overarching principles. As far as I could see, people take a few useful approaches when trying to depict three dimensions onto a flat drawing.

First, if there isn't too much overlapping, draw it like a two-dimensional map, but use color, shadow, or iconography to indicate depth (for example, the Jet Stream example or this graphic of the Norwegian Current). I think this approach works best if depth is the most important thing depicted, and the rest of the information can be simplified. Otherwise, the depth/altitude information becomes hard to notice. If Aurora didn't have many types of natural geography or had only one or two great currents winding their way through a static airscape, that might work, but I envisioned something a lot more dynamic. So, reluctantly, I let this idea go.

Second, depict it as a 3-D cutaway drawing, such as this drawing of a nuclear reactor or this one of skin. I think if the map were narrow enough that each longitudinal point only had space to fit a couple points of interest, then this would work. Drawing it well would take some serious skills and time on task, which I wasn't sure I could devote, so I put the idea in my pocket and moved on.

Third, divide altitude into discrete layers and deal with them separately. That's what blueprints do, such as this one of Mission San Luis Rey de

Image Credit: Cathy, the Overprepared GM

Francia, where each story is self-contained. If I divided the currents into layers of different altitudes, I could do a similar treatment for Aurora. The drawback is that sometimes it's a little tough to see how the layers overlap, a problem I could ameliorate by drawing or printing out the different layers in transparency film. Then, I could look at each layer independently or stack them on top of each other as needed to see how one would line up with another if the player wanted to travel between layers.

The Multiverse

I had a plan for drawing my planes, but then I ran into another problem: how to depict the overall multiverse itself. When my players travel from one plane to the next, they would need to be able to plan their routes. They would need the interplanar equivalent of a roadmap. For a single world, I have a very good idea of how travel works because I do it all the time. I understand what information is useful to have on a map for someone going from place to place. I wasn't sure exactly what would be best for interplanar travel, however. So again, I started with a bit of research, Googling terms like "multiverse map" and "map of the planes" and looking at images those searches brought up.

Most multiverse graphics focused on acting as a cosmological reference—using design to show what planes exist and, if possible, how they're related to each other. They seemed to be less like geographic maps and more like Venn or network diagrams. This approach seemed useful as a reference and to establish atmosphere, but it seemed fairly useless for navigation. Of course, I couldn't resist creating a cosmological reference graphic anyway, though I wasn't sure it would really help my players if they wanted to really understand how to travel around the planes.

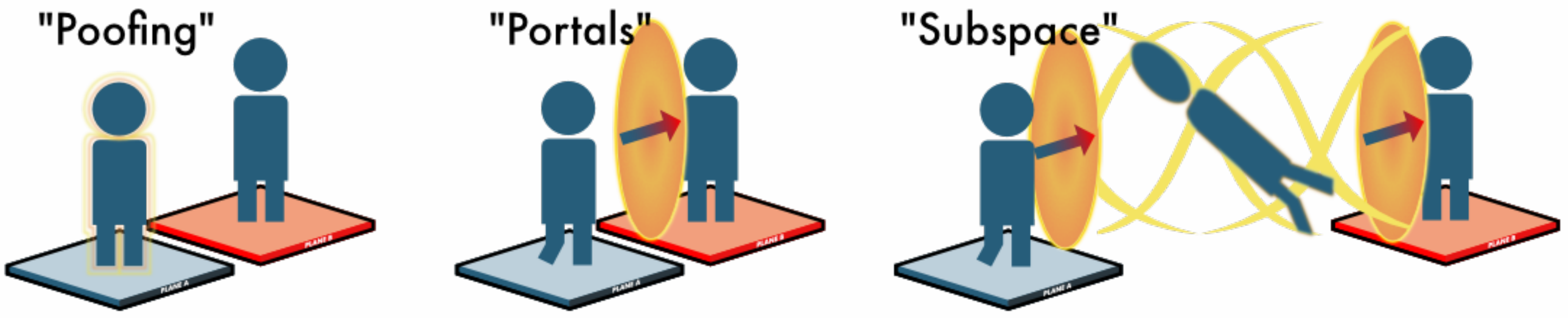
Then I started combing through my information design books and websites to see if some other, non-map design might have been applicable. I looked through a cornucopia of graphs, charts, tables, layouts, and designs too specialized to have gotten an official name, but in doing so, I realized I needed to figure out the details of how interplanar travel worked before I tried to conceptualize an information design for it.

Interplanar Travel

After some deep thought, I decided to split interplanar travel into three categories.

1. *Poofing:* I call the first category of interplanar travel the poof method, because they go "poof", just like that. Feel free to refer to this

Interplanar Travel, Image by Adam Bassett



by a more dignified name. Using the poof method, the characters can instantly travel from an arbitrary location in one plane to a location of their choosing in a different plane. I mean, they may experience some time passing, but for all intents and purposes, they just magically teleport. Examples of the poof method include using the Ruby Slippers from *The Wizard of Oz*, the Tardis from *Doctor Who*, or the Gate spell in D&D. If interplanar travel depends on poofing from place to place, then the players only need to have maps of the individual planes and some sort of cosmological reference. They don't need any sort of map analog to traverse the multiverse.

2. *Portals:* Using portals, there are specific places in each world that are connected to specific places in other worlds. They may be called conjunctions, coterminous planes, wormholes, doorways, gates, or some other term. For cartographic purposes, they're all the same. These portals are part of the plane's geography. If the portal is open or active, then travel through it is very much like teleporting with the poof method. The key difference is that players need a visual depiction of how the portals connect to each other to help them navigate. In particular, they need to be able to tell where the portals are in their plane of origin and where they connect to in their destination plane. I think flight maps, similar to what airlines have, serve as the best analog in designing a useful atlas for navigation with portals. They show all their flights as curved lines overlaying a world map. The difference is that in a multiverse with portal travel, we'd need lines to connect points on disjunct world maps.

3. *Subspace:* In this scenario, characters travel by going into portals, but travel through the portal is not instantaneous. Instead, they enter a different place (I'm calling it subspace) that must itself be navigated in order to arrive at their destination. Subspace can have very different physical rules than the other planes, but all planes are connected to it somehow. Examples might be the Spire from Planescape or the Ena from Andrea Host's *Touchstone* series or the Never Never from Jim Butcher's *Dresden Files*. Mechanically, this is a special case of portals where the connections all go in and out of a single world. However designing a navigational aid for subspace is a different design problem than doing so for a set of portals. Since everything goes through one area, and that area is not itself a destination, then it's more useful to use a subway map as an analogy. Players will need a good reference of possible portal stations that connect the other planes to the subspace and enough geographic info of the subspace to navigate from portal to portal. They won't need a full atlas of the subspace, but have to understand enough to choose routes. Now, subway maps are problematic because they heavily simplify the design. This makes it easier to read,but the increased legibility comes at a cost of geographic realism. Since subway riders only need to know which stops to use, distance and direction can be distorted far more than in regular maps. It's a design approach that many people will be familiar with, but requires judicious handling.

Image Credit: Cathy, the Overprepared GM

After some contemplation, I decided to use the subspace approach to interplanar travel. Players enter a separate subspace, Aeon, and have to navigate around that before exiting to a new plane. It can also act as a way to take shortcuts if they're clever, connecting two places that are distant from each other by a shorter path in Aeon.

Bringing that back to Aurora, that meant that in addition to adding portal locations to the map of Pandora (the original world my characters started in) and Aurora (the plane of air), I would have to create a separate map showing Aeon. It would initially focus on the portals and land between them. I could add lines connecting portals within Aeon to those on other planes. Eventually, if the stations and lines filled enough of the space, it might make sense to make a full Aeon atlas, but it's more likely that we'd finish the campaign before we got that far.

The Takeaway

You may or may not want to use Aurora. However, if you decide to chart your own multiverse, here are some common lessons to keep in mind.

Cartography and Information Design are fascinating fields developed by smart folks. If you're creating something new, it's useful to look around and see what other people have created to deal with similar constraints. Take the time to nail down what you're trying to show before you try to design for it.

The Purpose of Maps in RPGs can be boiled down to:

1. Navigation: helping players understand how to get from place to place.
2. Reference: because looking up all the places and how they relate to each other is easier with a picture than a list.
3. Atmosphere: to associate qualities or characteristics to places.

Airscape Icons can mostly be the same as iconography from more traditional atlases. Floating cities are still cities, after all, though some features require new icons:

- Turbulence regions
- Storms
- Epiphyte forests
- Areas of heavy or differing gravity
- Relative wind speed or cycle length (the time it takes a current to make a full cycle through its path)
- Vacuum or pressure difference

Fluid planes are ones where the points of interest move in relation to each other. One approach might be to envision them either as jet streams or currents moving among stable points. Another might be to visualize them acting like gas giants with the entire airscape banded by currents moving at different velocities and separated by a turbulent transition. In either case, it's useful to draw one map that shows all the bands and how they relate to each other physically. Then, draw each band separately as its own graphic (the same way we label cities on a world map) and create separate city maps. Fluid planes may be dominated by air, gas, or water.

Planes with altitude are those where different natural geographies may exist at each two-dimensional point. If there is little overlap, it may be possible to draw this as a more traditional, two-dimensional map and just indicate depth or altitude by color, line, or iconography. If there is a lot of overlap, then this traditional 2-D style is not practical. Instead, the most workable design organizes the world into layers at different depths. For a water world, those layers may include a surface layer, photic zone, and aphotic zone. An arboreal world may include layers like the canopy, understory, surface, and root zones, while an underground world's layers may simply serve as depth indicators.

Cosmological charts are a useful reference to know what planes exist and how they relate to each other thematically, but they generally do little to help players navigate.

Portal maps show how different planes connect to each other through portals. They are similar to flight maps in the real world. If interplanar travel always goes through a special space that is not a destination of itself, then it may be practical to create something like a simplified subway map to help players navigate between worlds.

ART FEATURES: TIFFANY MUNRO AND BENJAMIN REECE

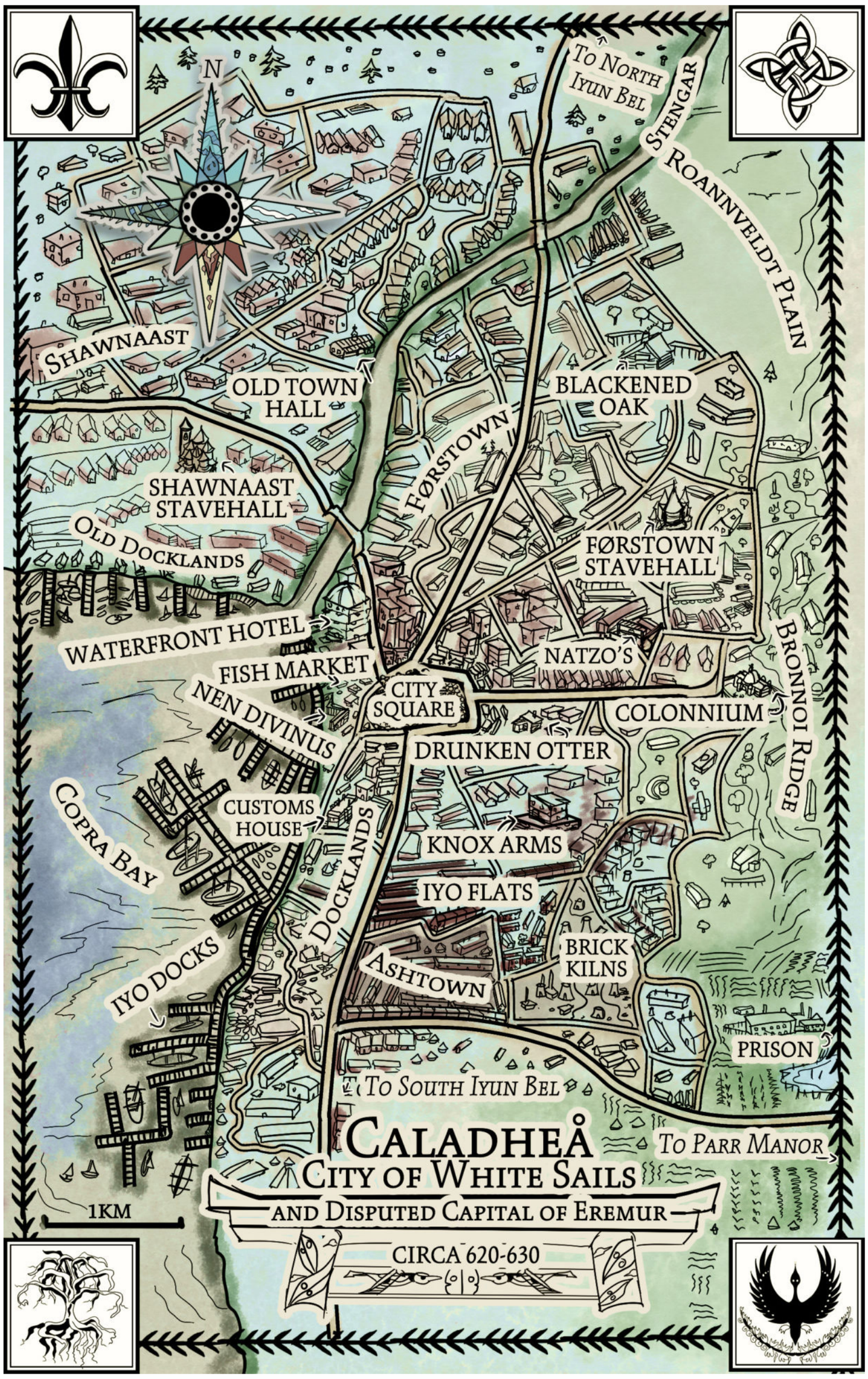
Art *Feature*

Curated and Written by Wynter

My name is Tiffany Munro and I am a Canadian digital artist. I've been designing maps for fantasy novels, board games, digital game media, and film since 2013. My interest in fantastic cartography began as a teenager in books such as *Lord of the Rings*. This continued on into my adulthood, and so I made my interest in this niche art into my career.

Worldbuilding isn't always about building an entire world, but about the world you see around your characters. When creating a piece for a client, the concept building will start with reading anything my client sends me and browsing inspirational images. From this, I spend a bit of time writing what I believe the writer wants for their piece, based on their work and any artistic inspiration they selected.

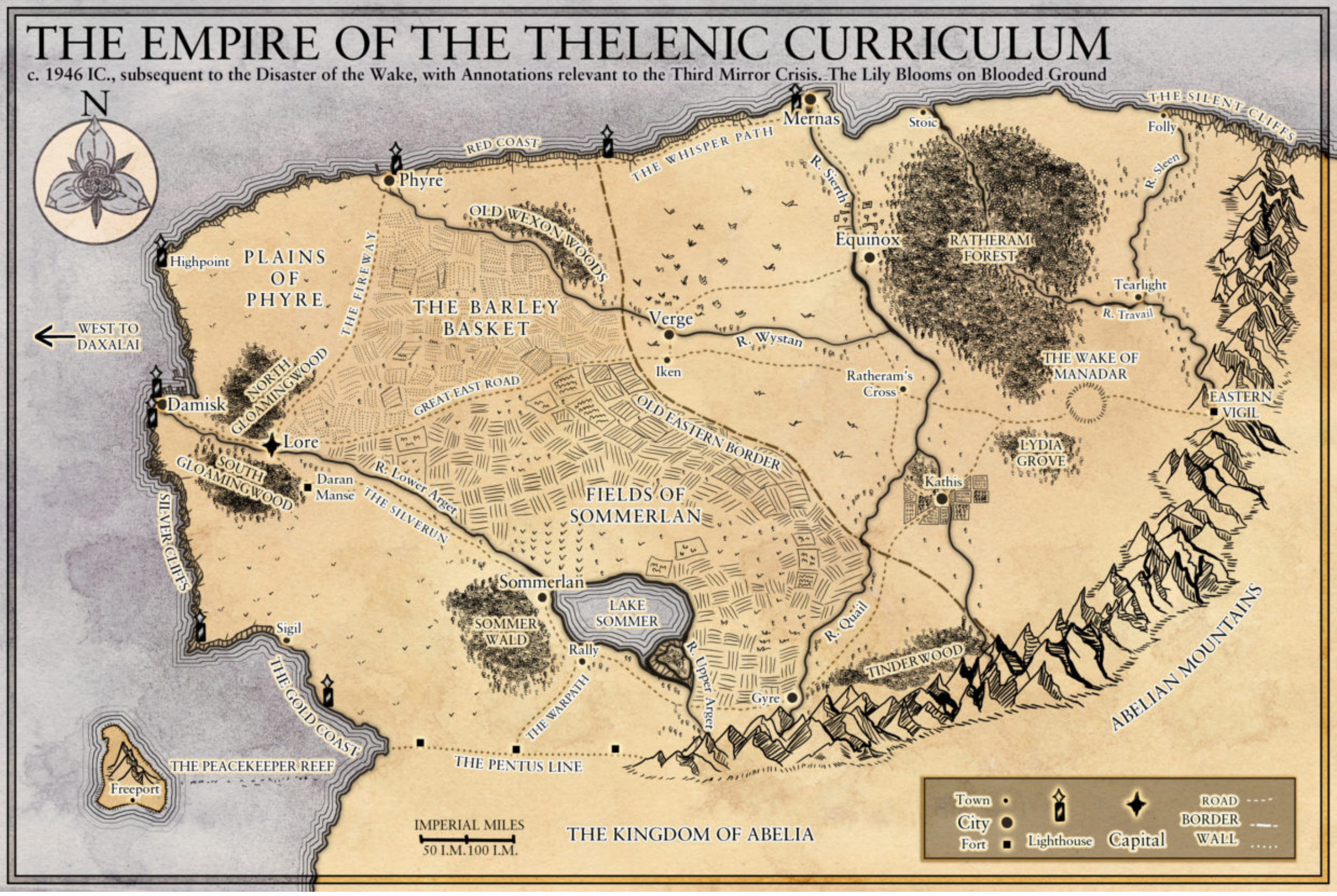
From there, I will go on to search for further concept art. Textures that resonate with the writing, photos of locations and landmarks, and historical maps are my go-to at this point (historical maps especially if the story is based on any era, along with art from that period if it's going to be highly historical). My goal is to work in subtle flourishes that evoke the general feeling and mood of what inspired the piece.



City Map for Flight, Image by Tiffany Munro

Next, I spend time doodling. This is when I start to shape the tiny pieces of art contained within the larger work of art. If a writer has spent enough time to define the trees and foliage that live in their world, I try to build up a set of appropriate plant life, so that if a reader was to spend ages dwelling on the contents they might always find little surprises. Or I might make animal life in the in-world style, tucking little creatures in the corners. All of these things are initially drawn outside of the map, and I rule out any I don't feel mesh with the goal of

Ridgeline Mountains, Image by Tiffany Munro



The Third Mirror Fantasy Country Map, Image by Tiffany Munro

the world. Once I've built up a collection of appropriate symbols, I move on to the next step.

The following step is the lineart for the map edges. If my client's sketch is nebulous, I will send them this before applying anything else and ensure they approve it before adding any color or texture. If their sketch is high quality, I will add some more zest before sending over the first piece for my client. I don't waste their time with my doodles and brainstorming unless there are significant gaps in what they've provided for me to work with.

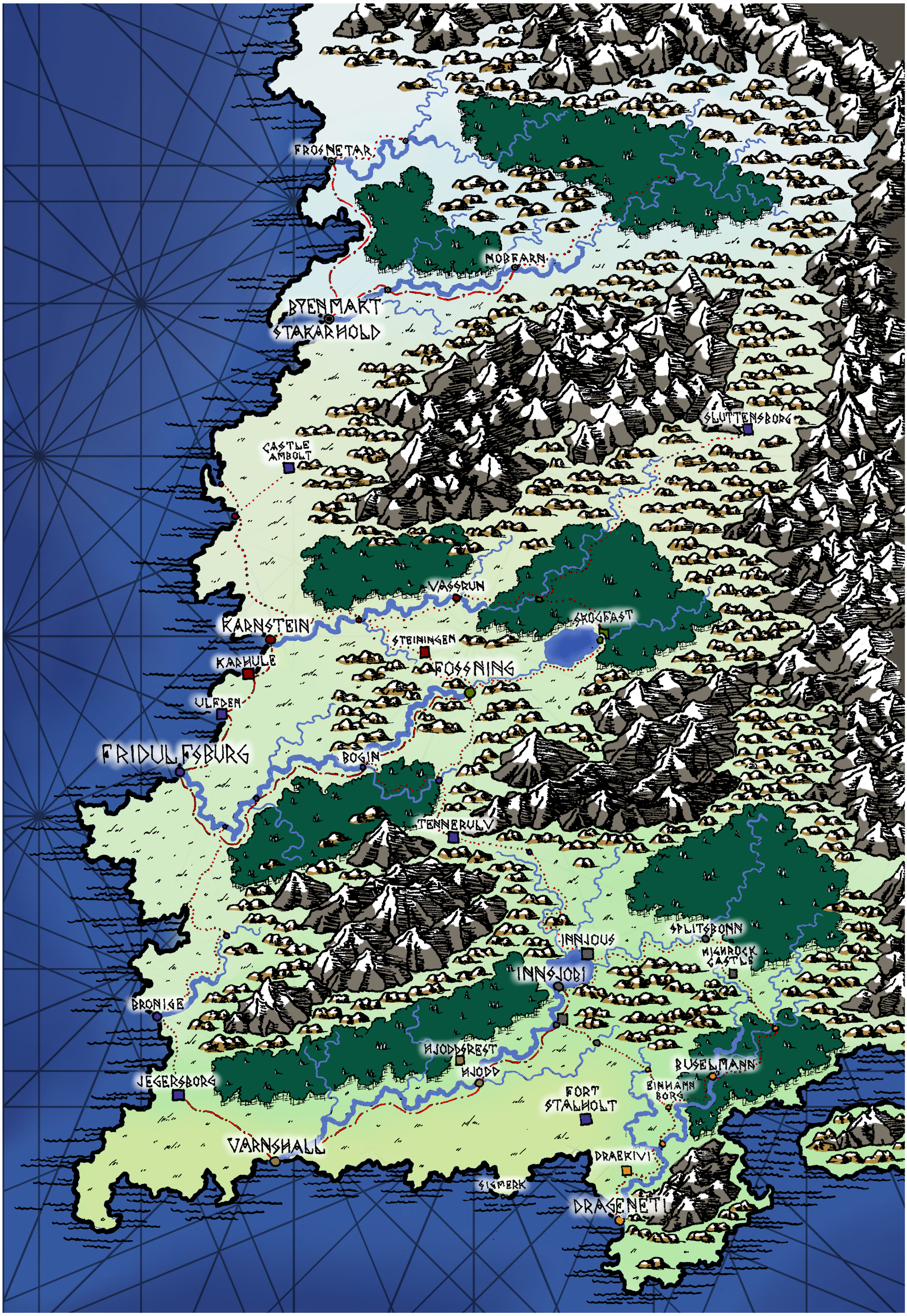
The main mood is always set by the backdrop texture, which may be as simple as a sheet of parchment or as complex as a watercolor or pastel painting. Color and texture are both ways of wordless communication to imply the age, liveliness, and inherent accuracy of a piece. Highly accurate lineart should not be paired with an overstated texture, whereas a continent map with large text and no precise features may have the texture as a main feature.

I consider the audience as a part of the story, rather than assets to it, in my work. I always imagine when I'm drawing a map that I am a cartographer who lives there, at their tech level, with their stresses and monsters flitting on the periphery when I am drawing a map. So, when I see a map, I find it best to imagine that I am in the world as well, picking the pamphlet off of the rack and unfolding it to see just where to go next in the city of my imagination. For example: the map the magus rolls out when declaring the war; the actual sketch made by the protagonist as he maps out the hidden tunnels; the aerial sketch of the fairy cartographer flying over the giant's city. Rather than being peripheral to the story, maps are works made by the characters within the story which address their needs.

I like to imagine that people spend time peering at tiny details hidden in the map and get excited when they discover an extremely tiny piece of art. They trace roads with their fingers and envision the route.

I suppose I view my art as imagination keys. Life here out on the mundane side is overwhelmingly busy for many people. It used to be so easy to just pick up a novel and tune it all out. Now, for me it's harder. Turning open a page to a map makes it easier to hop the wall of disbelief and pretend for a while that this is the world I see. They are additional worldbuilding and a way for someone who didn't build it, to enter.

See more of his work at Artstation.



Sjonderworld, Image by Tiffany Munro

Hello! My name is Benjamin Reece, and I am a cartographer, illustrator, writer, and Dungeon Master. I have been worldbuilding for several years now, and only in the past two years have I added cartography to my toolbox.

For large-scale terrain maps, ones that show significant stretches of geography, mapmaking *is* worldbuilding—literally and figuratively. I start by deciding (or randomly generating, either by computer or by wandering pencil) a rough coastline. From there, I try to consider where I might want tectonic activity as that will determine the placement of mountains and hilly terrain.

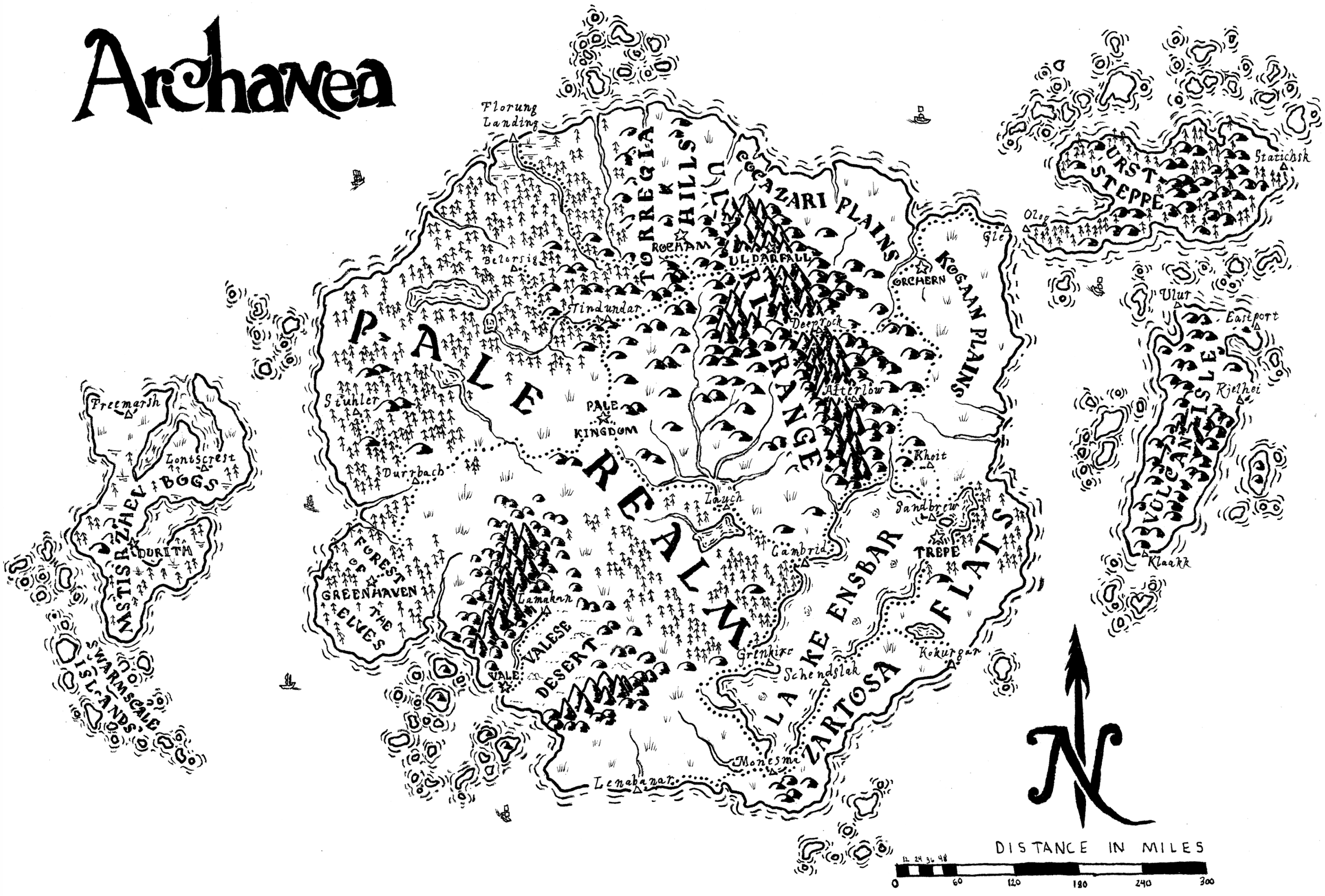
After that, I decide where on the map the primary trade winds will fall. This determines rainfall, which determines where water collects and flows, creating both vegetation and rivers. If I'm adding civilized elements, settlements and roads typically are found on rivers and deltas, with minor roads and settlements forming connective tissue in the hinterlands.

Archanea, Image by Benjamin Reece

It is during the placement of additional civilized elements (especially secondary and tertiary settlements, as well as name generation) that I have to take a step back and consider the history of the world. How many centralized factions are present in this world? What are the relationships like between the various settlements?

One of the most reassuring parts of worldbuilding is the inherent laziness of people and the names they give their settlements. If you've ever looked at a true name atlas of England or America, you'll know what I mean. Don't feel self-conscious about naming a city "Greenville" or "Highwater"; even those are subtler than the names of real places.

Beyond just being descriptive tools of geography, maps can also tell a story. By studying a map, you can learn something about the person and the culture that created it: what was important to the mapmaker, what the map was likely to be used for. A map of wide, crude brush strokes and simple pictograms is a much different map than a map that details every peak in a mountain range, even if they depict the same area.



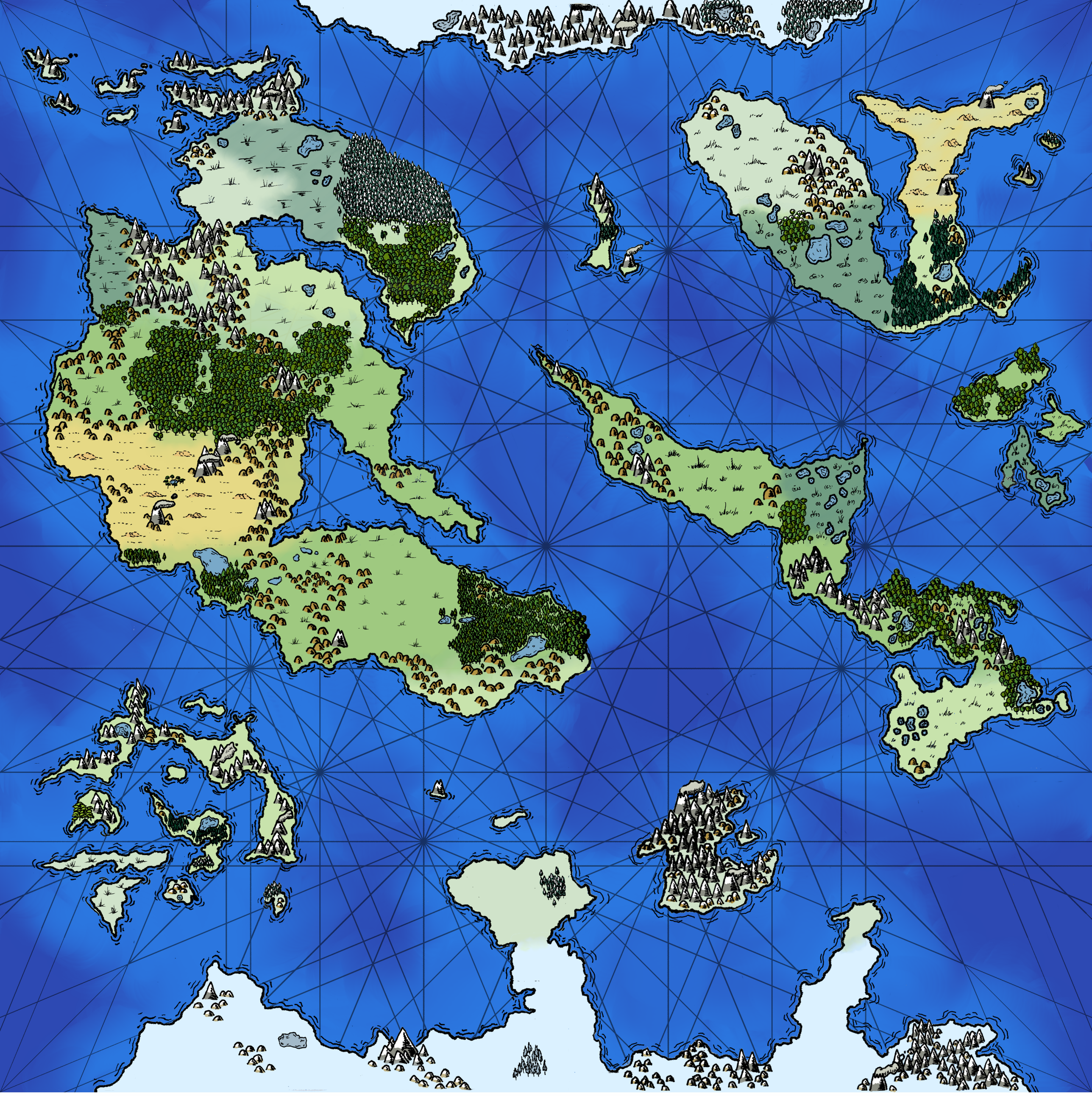


Image by Benjamin Reece

Like all stories, maps should focus on the most relevant and interesting parts of the world you want to make. There will always be small hamlets and villages between major trading cities, but those gray areas are what random tables are made for. What's most important is that you focus on the things you want to include in your map and which will bring you the most enjoyment out of it, even if only your gaming group sees it!

Special thanks to Tiffany Munro and Benjamin Reece for letting us share their work.
If you are interested in being featured in an upcoming issue of Worldbuilding Magazine please email or contact us on Discord.

QUESTIONING THE BIPEDAL DEFAULT

Theory and Analysis *Biology*

M.E. White

Plato had defined Man as an animal, biped and featherless, and was applauded. Diogenes plucked a fowl and brought it into the lecture-room with the words, "Here is Plato's man."

- Lives of the Eminent Philosophers by Diogenes Laërtius, translated by Robert Drew Hicks Book VI.

Introduction

Fictional animals come in all shapes and sizes, as it should be when the only limiting factor on biodiversity is the imagination of the artist. Why then is it, out of all possible forms, that sapient creatures are overwhelmingly depicted as bipedal with an upright stature? What a coincidence that they should all so strongly resemble humans! Sure, okay, there are some good reasons for this resemblance, but there are equally valid arguments to support the belief that, intelligent or not, real-life aliens would look, well, *alien*, and not much like us at all.

Ultimately, however, the jury is still out. While it's entirely unlikely aliens would be indistinguishable from us but for blue skin or pointed ears, bipedalism is one of those features many will argue is a prerequisite for civilization. Whether or not bipedality and sapience are truly linked in such a way is a fact we may never know. However, it is my personal opinion that, regardless of accuracy, a universe full of intelligent bipeds is just boring. A huge part of the joy in worldbuilding is in exploring the huge diversity of outcomes that never came to be on our world, but maybe could have been, here or elsewhere. Tangible possibilities and impossibilities made tangible: these are what the best worlds are made of. To imagine the strange is to meditate on the specific chain of events that brought about our own reality and wonder at how different circumstances could have given rise to another. It is very easy to take your own basic assumptions for granted. Here's my advice: don't! Use worldbuilding to challenge your preconceptions about the world you inhabit and gain fresh perspectives.

As humans, we are biased towards associating bipedalism with sophistication. For me, this oversaturation of bipeds is reason enough to explore alternatives when designing non-human people to populate my stories with.

This article will be mostly geared towards designing aliens for science fiction, a genre in which the audience places a higher burden of plausibility on the world. In the case of fantasy, a genre in which less plausibility is required, I would urge you to push the limits even further. Sometimes even fantasy creatures can benefit from a little scientific grounding, but all that's really necessary is an internal logic. The creature should make sense in its own world—it doesn't need to make sense in ours. Creatures that are truly strange to behold yet biologically plausible can be an impressive sight. However, creatures strange and *implausible* can inspire a sort of awe all their own. Plausibility is not a metric for quality. Realism and surrealism can each possess beauty incomparable. In either case, liberating your creature design from the humanoid mold will reinforce the sense that your world is far different from ours.

As you read, ask yourself lots of questions. "But what if I did this differently?" If you follow that what-if to its conclusion, you may find that whatever idea you have doesn't actually work, or perhaps it does but not in the way you expected. Either way, you are bound to learn a lot through these sort of exercises. Keep your mind open, yet critically detached.

Background: Why Are Aliens Bipedal?

Recall the earlier question: Why, out of all possible forms, are sapient creatures

overwhelmingly depicted as bipedal with an upright stature? In other words, why do they all look so human? Let's begin by answering that.

First, one must consider that in movies, television, and—to some degree—video games there are often constraints, both those of budget and those inherent to the medium. Before CGI, aliens had to be either puppets, animatronics, or actors in makeup, prosthetics, and costumes. Often it was the latter, being the cheapest and simplest option. Even after the invention of CGI, this tendency is still the norm. Since actors are bipedal, so too are the aliens they portray. In the case of video games, if the models for humans and aliens are similar enough the same animations can be applied to them both, saving time and effort.

Secondly, there's that pesky aforementioned bias to consider: human bipedalism is structurally unique, and humans like to think they're hot stuff, thus bipedalism, and human resemblance in general, becomes part of a visual shorthand for sapience, the truly defining human trait. Simple chauvinism can be a potent motivator in design. Certainly, there is no lack of creatives suffering from egotism, but by no means are their audiences exempt from it themselves. Making aliens bipedal is one way to make them relatable. Familiarity fosters fondness. But while the human brain might be wired to appreciate human-like shapes, why underestimate the audience's capacity for empathy? We care very much about our pets and often attribute intellectual and emotional depth to them, a phenomenon known as anthropomorphism. The same and more can (and should) be afforded to aliens. After all, maybe humanity will encounter other intelligences someday, and we should not count on them looking like us.

Of course, there are some strong, scientifically-backed reasons for this design, as well. To pretend otherwise would be strawmanning the opposition. Convergent evolution, for one, is when disparate taxa independently evolve similar traits to adapt to similar environments or niches. An example would be sharks, ichthyosaurs, and cetaceans, which are fish, reptiles, and mammals respectively, who all evolved very similar streamlined bodies and prominent dorsal fins. Some would say that a species that is intelligent enough to develop language, technology, culture, and civilization on par with our own would have likely taken a similar evolutionary path.

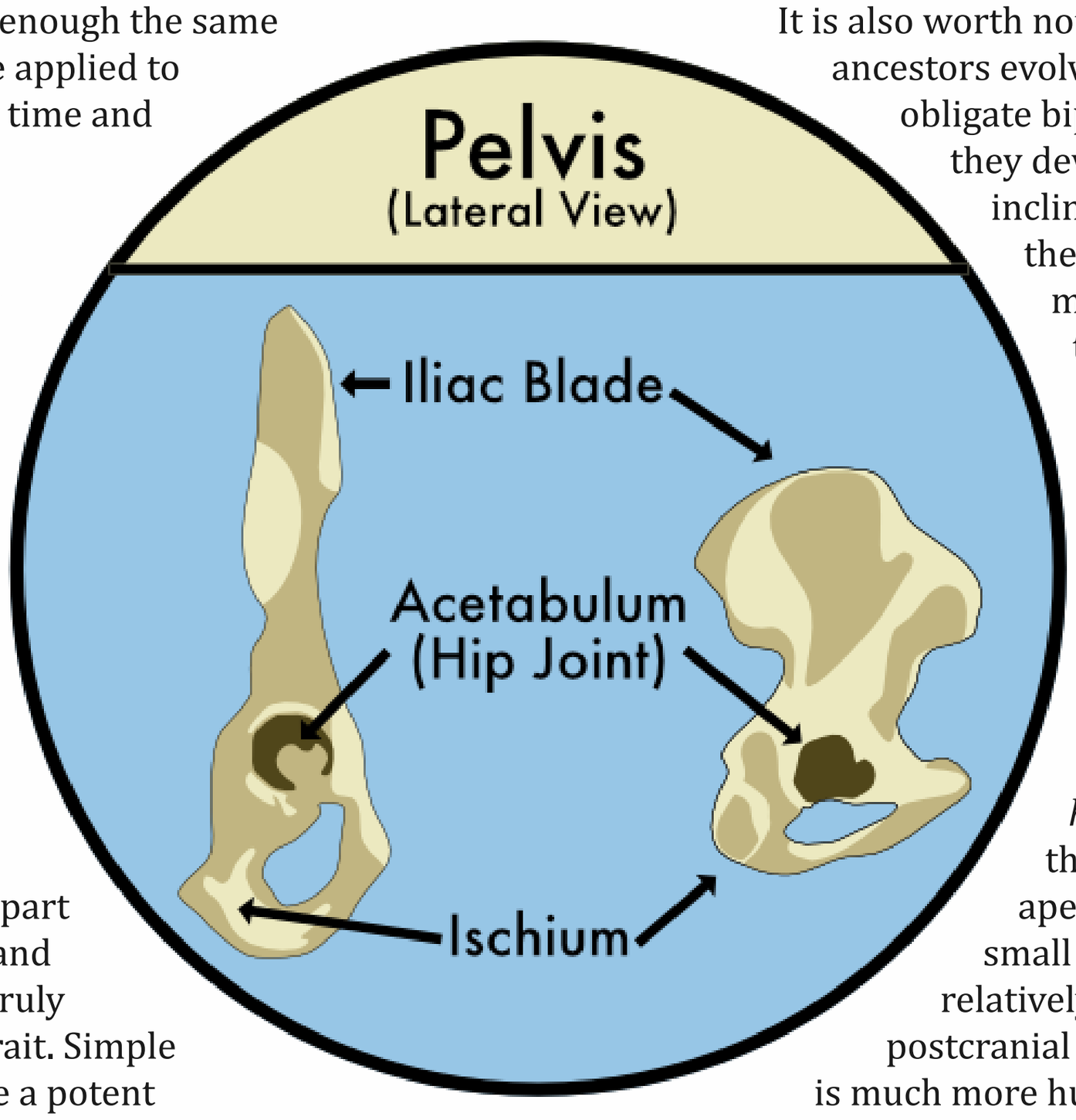


Image Credit: Adam Bassett

It is also worth noting that early human ancestors evolved to be habitual or obligate bipeds—which is to say they developed the natural inclination to walk on the hind legs—before many changes in the skull ever took place. Let's look at *australopithecus*, a genus related to and preceding *homo*, that disappeared around two million years ago, around the same time as the emergence of *homo habilis*. The skull of the australopithecus is apelike, with a relatively small brain case and a relatively robust jaw. The postcranial anatomy, meanwhile, is much more human. They share certain derived traits with members of genus *homo* that indicate bipedality: an anteriorly positioned foramen magnum—the opening where the spine attaches to the skull—which allows the head to be held aloft; an s-shaped lower spine, which aligns the head and torso well above the center of gravity, as well as providing shock absorption necessary for bipedal locomotion; a broad, bowl-shaped pelvis for stability; and inwardly angled femurs. These are all traits other primates lack but that the ape-brained australopith had in common with us. Because bipedalism came first, it is possible and even likely that the development of erect posture facilitated later changes in the brain, and behavior by consequence. It is an undeniably important

element in human evolution. Strong emphasis on *human*. As we shall soon discover, this is only one evolutionary path out of many.

Further Background: Why Did Bipedalism Arise in the Human Lineage?

Now, there are some problems with drawing conclusions about our hypothetical aliens based on the concepts explained above. I don't think I need to explain how budgetary restraints and lack of creativity don't reflect scientific reality, so let's dive right into the good stuff: criticizing the application of theory.

Firstly, convergent evolution requires a similar environment or niche. The niche of humans can be hard to define, as we have used technology and culture to construct and expand upon our natural niches. The same can be assumed for any intelligent life. So let's forget niche and focus on environment.

The transition from quadrupedal to bipedal movement occurred around the same time as certain changes in the African savannah: the forests were thinning, creating vast grasslands. Our arboreal ancestors, adjusted to living in the canopies, had to adapt, driving speciation. Ancestors of orangutans would branch off first, becoming extremely specialized for life in the canopies; they are masters of what is known as quadrumanous climbing, using all four limbs like grasping arms. The ancestors of gorillas, chimpanzees, and humans would all become, to varying degrees, adapted for terrestrial life. Modern gorillas and chimps are mostly quadrupedal knuckle-walkers, but are capable of vertical climbing up and down trees, and still rely on the canopy for some of their resources. They also developed the ability to walk upright on occasion, a locomotive strategy known as facultative bipedalism, as opposed to habitual or obligate bipedalism.

While orangutans specialized, gorillas and chimpanzees became more versatile: two viable strategies to adapting to the changes in forest density. What early humans would eventually do, by contrast, was take advantage of the newly opened grassland niches their relatives had yet to exploit. This is where bipedalism comes in handy, according to the savannah hypothesis. It is more efficient for traversing the flat expanse, and elevates the head for increased scope of vision.

It's important to point out that the savannah hypothesis has come under scrutiny in recent years. The transition to dry grassland might have been more gradual than previously thought, and bipedalism might have begun in the trees before moving out into the open plains. This is supported by the fact that not only do the vertical climbing and knuckle-walking of gorillas and chimps utilize similar muscles to human bipedalism, but also it is speculated that the common ancestor of all extant great apes may have used a sort of hand-assisted bipedalism by grasping overhead branches while climbing. These pre-adaptations could have formed the foundation of that distinctive human walking style.

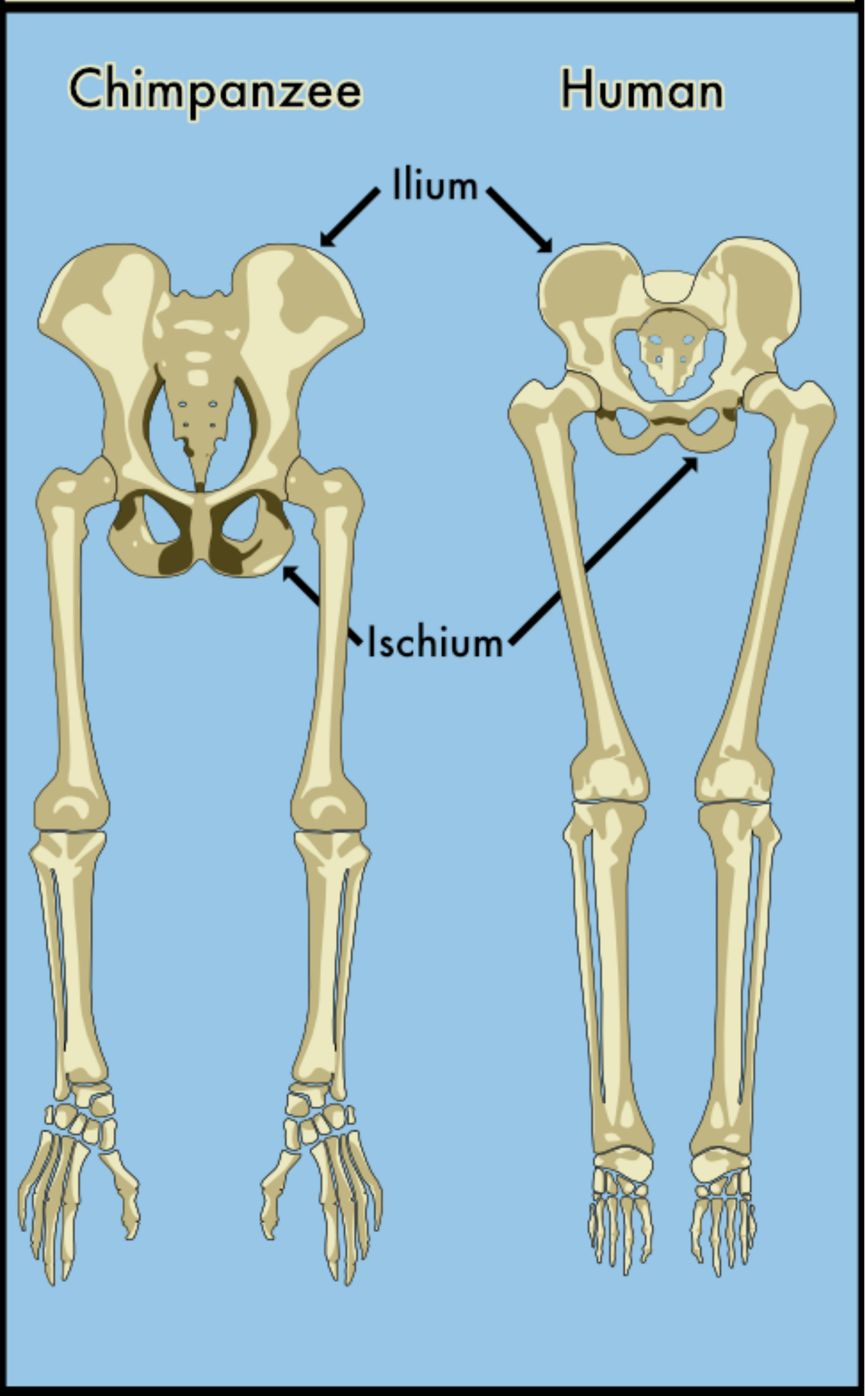
Regardless, it is fair to say that the advent of human bipedalism was a unique occurrence happening under extremely specific circumstances. The specific environment had to change when it did. Timing is just as important as place. Without certain morphological pre-adaptations unique to apes existing at the same time as the shift in environment, bipedalism might not have been possible at that time. While it's possible for all these factors to align somewhere else, requiring all your alien civilizations to have arboreal origins seems pretty limiting. Let's explore some alternatives, shall we?

Some Alternatives

In order to figure out how your fictional species managed to cultivate civilization while following a different evolutionary route, it's vital to understand the various ideas about the evolution of human bipedalism. These are good jumping off points for positing alternatives. Overall, though it may seem counterintuitive, this article is less concerned with the evolution of bipedality than it is with the evolution of higher-order intelligence. These traits happened to co-evolve in humans, and understanding why can illuminate how one might de-couple one from the other.

Non-Humanoid Bipeds

First, it's important to acknowledge the potential for bipeds that don't conform to a humanoid model. These body plans will not only be visually different, but functionally so as well. For this reason, they are more interesting than a cut and dry human build. There are certainly other bipedal animals on Earth we can look to for



examples. Aside from leg number, these bipeds share little in common with humans, varying wildly in appearance and lifestyles.

Let's look at the kangaroo and velociraptor. Two very different beasts, both bipedal, though the similarities don't quite end there. Note that both their torsos lean forward and must be counterbalanced by a tail. Contrast this with the orthograde posture of the tailless human, standing fully upright and balancing smooth strides with alternating rotation of torso and pelvis. Of course, morphological differences have functional consequences, and the act of walking is changed.

The kangaroo hops; its legs are locked together in parallel motion, unable to move independently, and for this reason it can't even walk backwards. Despite this, kangaroo hopping is among the most energy efficient forms of locomotion in the animal kingdom. When there's no rush, kangaroos will forego hopping in favor of crawling, using their forelimbs and tail in addition to hindlimbs, making for a technically pentapedal gait, though this actually consumes more energy than hopping does.

Velociraptors might have lurched forward or waddled. Unlike the kangaroo, their tails were inflexible, and would have been capable of limited side to side movement at most. Still, the tail is speculated to have provided stability during speed bursts and sharp turns.

Another alternative body plan that includes bipedalism comes in the form of our close relatives, the chimpanzees. They are primarily knuckle-walkers, but they are capable of walking bipedally temporarily. Walking this way appears uncomfortable and just plain awkward for them; they must shift their weight side to side, bowlegged, but they will do so to carry food for short distances, as there surprisingly appears to be little difference in energetic cost between two and four-legged movement for them.

There are many ways to design a biped, habitual or not, that is anatomically distinct from humans, and you don't need to limit yourself to working off of these examples. While these creatures will be functionally different enough for their civilization to prove intellectually and creatively challenging to imagine, there will also be familiar touchstones that will ease the way. Maybe, like us, your creatures put their pants on one leg at a time, but an additional sleeve is required to accommodate

Image Credit: Adam Bassett

their tails. Would a hopping creature use stairs like we would, or would they require a different design? It's enticing questions like these that make worldbuilding so much fun.

It is worth noting that many quadrupedal animals are capable of rearing up on the hind legs, sometimes even standing, but as they cannot walk this way they will not gain the benefits of even facultative bipedalism and will need to establish different strategies to achieve most of the same results. You see, aside from movement, there are other advantages to an upright posture. Some of these advantages help enable cultural advancement, so finding alternatives to these for our intelligent quadrupedal creations is top priority.

Hands

The primary advantage of bipedalism for apes, including humans, is apparently the freeing of the hands from locomotor tasks. Without going into too much detail, this helps mostly with carrying food and tools.

Let's take tool use as a given for any creature capable of forming a civilization (because, at the very least, I think we can all agree it's a critical component). To make complex tools, one needs the ability to manipulate the environment. Hands are certainly good for that, but what about an upright stance? Many tools can be constructed while sitting down. Recall our close relative the chimpanzee, a renowned tool-maker, who has hands quite similar to our own, but only walks upright on occasion.

The only advantage bipedalism brings to the table is the ability to *carry* tools, which doesn't necessarily influence the ability to *craft* tools. Or does it? It is possible that reliance on the hands specifically for tool use would lead to specialization and refinement of fine motor skills needed to craft *better* tools, but it's also possible our ancestors already had those before becoming bipedal. Perhaps all they needed to improve upon their tools was time. Consider this: if you can't conveniently carry your tools around, you have to abandon them and start fresh every time you need that tool again, which doesn't make much sense unless the tools are relatively simple, like the sticks chimpanzees use for termite-fishing. If you can conveniently bring your tools with you, refining them isn't a waste of your time. Think about how long it would take to chisel a spearhead and imagine having to repeat the process every time you needed one. Not a very effective survival strategy, there.

What makes human tool use relatively distinct is cumulative growth. A number of animals that make tools can learn to do so by observing a conspecific, another member of the same species. Tool use and even gestures can spread through social transmission. This is not uncommon in the animal kingdom. To observe another using a tool and improve upon the design is what is, on Earth, uniquely human. Bipedality would have had the accidental consequence of making tool conservation easier, which allowed our ancestors to spend more time on them, making them better. What's more, the oldest stone tools ever found predate the oldest known fossils of genus *homo* by half a million years. Remember the ape-brained *australopithecus*? They could have crafted these tools, and their ability to carry them might have made that practical where it simply wasn't before. Reliance on tools might have led to natural selection for larger brains in humans, and the rest is history.

Having free hands also helps when using weapons. In particular, the set-up of the human shoulders is great for spear-throwing. The benefit of using spears, whether for throwing or jabbing, is that it puts some distance between the spear-user and their opponent. They are not making themselves vulnerable by using a part of their bodies to attack. Humans do not have natural weapons; like most primates, humans have nails rather than claws. and their teeth are greatly reduced in large part because of using tools to process food. As bipedal animals, lunging at another animal to bite them would be awkward and unbalancing, so assuming this stance already decreases the utility of the teeth.

In addition, carrying food from place to place might have been key for early humans, who did a lot of scavenging. Eating an animal carcass on the spot could be dangerous, since the predator could return at any time to finish its meal.

It also might have been beneficial for males to be able to provision for females and their mutual offspring. The offspring of primates are extremely altricial, dependent on their mothers for longer than most other animals, and this is exaggerated even more so in humans. The changes in pelvic morphology for bipedal movement, in addition to

having larger brains than other apes, lead us to what is known as the "obstetrical dilemma." Labor is uniquely painful for humans. This is not an adaptive part of bipedalism, but a tradeoff.

Human infants have to do a lot of development outside the womb, being incapable of walking or speech. They are also more difficult to transport than the infants of other apes, who cling onto the hair on their mother's horizontally oriented back using grasping hands and feet. It is thought that early human males might have transported food to females and their offspring, possibly leading to monogamy, decreased inter-male competition and therefore decreased sexual dimorphism. The carrying and provisioning school of thought for the origins of bipedalism is popular, and supported by the fact that other primates will walk bipedally to carry food for short distances. Remember that evolution often acts on pre-existing traits and behaviors if they prove advantageous.

The provisioning hypothesis has its detractors, in large part because early humans might have been polygynous. I will not delve into these criticisms because not only is the provisioning hypothesis, if even true, unlikely to have been the largest or most important contributor to human evolution in the first place, but I also think it's least likely to be relevant in a worldbuilding context. It serves as another example of how freeing up the hands could have been a benefit of bipedalism, but unlike tools or weapons it seems less vital to consider.

It's here that I'd like to point out that these hypotheses are not mutually exclusive. The development of bipedalism in humans likely can't be attributed to a single advantage or cause. Any of these ideas could be false, and more than one could be right. I think it's worth covering as much as we can, but ultimately after some consideration you may find that not all of these adaptations are relevant to the evolutionary history you are building. That's fine! Perhaps you are on the brink of a remarkably inhuman creature concept.

Look Ma, No Hands!

So we've established that freeing up the hands gives humans certain advantages that any sapient creature would need if they were to get to the point of forming a civilization. Let's isolate those advantages and consider ways to achieve them without bipedalism.

Let's start off with food transport. Like humans, elephants also evolved in the savannah. Their herds frequently rely on their matriarch's ability to recall routes to alternate food sources; instead of transporting the food, they travel to the food together, safe in their numbers. However, elephants gestate for twenty-two months, and are capable of walking shortly after they are born. Their strategy is possible because their infants are more precocial, which is to say less dependent on their mothers, than those of humans. A different strategy might involve finding another way to transport the offspring, perhaps in a pouch like a marsupial. Additionally, many rodents and some primates make use of cheek pouches for transporting food, which is another strategy that does not require free hands. Many animals store food away in hidden caches. Consider also that in another habitat or niche, food carrying may or may not be as useful a strategy. Perhaps your species food source is not easily transported, like nectar or blood. Perhaps you have a species of intelligent grazers, negating the need for food transport in the first place. Look at the issue from multiple angles and many alternatives become apparent.

As for weapons, there are some limitations that cannot be overcome. While an animal with a stature like that of the kangaroo or velociraptor might be able to use their hands for grasping purposes, they would lack the high flexibility of the shoulder bestowed upon us by our brachiating primate ancestors. An animal built this way would have difficulty with certain movements. They probably won't be throwing objects such as spears, though this is hardly an insurmountable drawback. Consider that maybe your species has natural weapons, like claws, teeth, tusks, or horns, making constructed weapons less necessary. Perhaps they aren't hunters, and rarely require weapons outside of self-defense. Maybe they go all defense; they could have shells, or build shields. Alternatively, perhaps your species' ancestors had a different reason to develop flexible shoulders than swinging from tree to tree. The appearance of your species' most primitive weapons will depend largely on the limits and capabilities of their anatomy.

There are also many potential prehensile appendages besides hands. Some animals have prehensile tails, but tails being posteriorly positioned makes them unlikely to be as good for manipulation, as they are out of the field of vision. A muscular hydrostat is a possible option,

examples of these used for grasping include an octopus' tentacles and an elephant's trunk. Another type of muscular hydrostat is the tongue, but it would require a lot of modification to be useful in carrying or manipulation, and would need to be dry. The penis of some animals, such as elephants and tapirs, are also prehensile (don't laugh, biology is serious business). Muscular hydrostats are less firm and more flexible than hands are, which could be a downside or an advantage, depending on the situation. Keep in mind that pre-existing structures can be, and often are, modified to suit new purposes. If an animal starts carrying certain objects with their penis and it improves their success, their penises might become even better at grasping over time (don't laugh). Think about it—a trunk is a modified nose. You could probably make any structure prehensile, if you try hard enough.

Anyway, you might notice that any lone appendage is not going to be particularly dexterous. Carrying doesn't require fine motor control, but crafting does. The solution to this is to try combining multiple grasping appendages on the same organism. For example, corvids might be bipeds but they do not gain the "freeing of the hands" advantage because of their wings. They have been observed making and using tools, however. They might use their beaks in combination with their feet to make tools, like grasping a piece of wire in one foot while bending it with the beak into a hook shape. While the beak and the feet are not particularly dexterous in isolation, they work well together. Try combining any of the appendages that have been mentioned above. Your species could also be quadrupedal with grasping hands, like a chimpanzee, but with an additional appendage of some kind, like a trunk or a tail, to aid in carrying while the hands are occupied in locomotion.

While there is so much variety just on Earth, you don't have to limit yourself to using its creatures for inspiration. For example, you could have an animal with six or more limbs, who uses at least four of the hindlimbs for locomotion while reserving those in front for grasping. Think something like a centaur. While not strictly scientific, psychic abilities could also be used to manipulate the environment and carry objects.

Miscellaneous Adaptations

Free hands are certainly the most salient adaptation when it comes to human bipedalism, but there are a number of other hypotheses worth throwing out there.

Some scientists also suggest social explanations for bipedalism. Chimpanzees and gorillas often make bipedal displays to settle disputes over mates and resources, so it's possible that early human ancestors made enough use of these displays that permanent bipedalism evolved. However, there are a number of ways to make oneself look more imposing. Puffing out the fur is one example seen in many mammals. Any sort of body part can be used in emotional expression, it's largely arbitrary, though visibility can be an important factor in communicating aggression. Other emotions might be expressed in more subtle ways. In animals less reliant on visual cues, perhaps smells or pheromones could be used. Skunks use stink in threat displays. While this hypothesis might sound a little silly, it's important not to underestimate the social element in developing sapience. Complex social systems necessitate an intelligent brain to navigate them. In primates, group size is positively correlated with neocortex size. Being social also benefits the intelligent animal, in that they can learn from their conspecifics without having to take risks themselves. And, of course, culture requires sociality. It might be just as, if not more, important than tool use.

Heat distribution is another possible reason that we evolved bipedalism. By standing upright, one reduces the area of sun exposure. I'm kind of dubious of this one, but let's entertain it for a second. What are some alternatives? Your creature doesn't need to live in a heat-intensive habitat, as early humans going into the grasslands did. There are a number of habitats that don't get much sun or where overheating is not an issue. Otherwise, many desert animals have appendages like large ears that help them keep cool by radiating the heat from blood vessels spread out over the surface area.

As previously mentioned, bipedalism also elevates the eyes, giving an increased scope of vision. This is useful in the grassy plains and perhaps other environments with vast stretches of visible land, but might not be as useful in other habitats. There are also other ways to elevate the eyes, such as an elongated neck, eyestalks, or an arboreal lifestyle.

Conclusion

Knowing the circumstances around apes' and humanity's bipedalism, we can better create our own bipedal creatures, intelligent or no. However, there are almost certainly endless possibilities for totally unique creatures with humanlike or higher intelligence that don't require bipedalism at all. Be creative.

Don't forget, however: *morphological differences have functional consequences*. Additionally, in the game of evolution there are almost always trade-offs. When one ability is gained or improved upon, another is lost or diminished.

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Glossary

Obligate Bipedalism - An obligate biped can only walk on two legs. Think ostriches or velociraptors.
Habitual Bipedalism - A habitual biped's most natural way of walking is on two legs. They may be able to walk on all fours, but it's uncomfortable and/or inefficient. Think humans and kangaroos. Obligate and habitual bipedalism are generally synonymous and used interchangeably.

Facultative Bipedalism - A facultative biped's most natural walking style is not bipedalism, but they can walk bipedally if the situation demands it. Think chimpanzees and gorillas.

Derived Characteristic - A characteristic that is "new" in the evolutionary line, sometimes resulting in speciation.

Primitive Characteristic - A characteristic that is retained from earlier in the evolutionary line.

Pre-adaptation - An adaptation that serves a difference purpose from that which it originally evolved. For example, gill arches in jawless fish served as the foundation for the vertebrate jawbone. Also known as exaptation.

Orthograde - Of an animal that retains an upright posture with independent motion of the limbs while locomoting. Contrast to pronograde.

Muscular Hydrostat - A biological structure consisting of muscles with no skeletal support. Think of the tongue or an elephant's trunk.

Postcranial - The entire skeleton apart from the skull.

HIGHLIGHT: WONDERDRAFT

Cartography *Resource*

Interview conducted by Adam Bassett

Wonderdraft is a new fantasy map creation tool that is currently being created by Megasploot. We were excited to have a chance to talk with the creator about the project. You can read about Wonderdraft below.

Hello!

I am Megasploot, a former professional game designer turned indie developer. I've been working on my own games for about two years now. I was a level designer for several years while still in the industry, so I have always been interested in mapping. Most of my worldbuilding experience comes in the form of working on games from existing IPs, which I suppose is rather similar to extending the Dungeons & Dragons universe as a Dungeon Master. Worldbuilding in this way is a recent endeavor for me.

When I became a DM at the urging of my friends, I learned of all the joys and pains of creating a world. Naturally, because of my background, I wanted to have good maps. I struggled with all of the tools that I tried and decided that they did not have the workflow that I desired, and thus *Wonderdraft* was born. Before the program had a name, it was only a tool for myself with just a few core features that embodied my workflow philosophy. I decided to be bold and show my tool off to the community in r/worldbuilding, and everything took off. Numerous encouragements poured in, as people asked where they could buy this software. I was quite literally overwhelmed. That's when I decided that I would give it a name and release *Wonderdraft* to the public.

Wonderdraft is developed with the creative user in mind. I have years of experience using tools to make games, so I understand that a bad workflow with lots of repetition and frustration affects the final quality of the map produced. I want a tool to be powerful yet intuitive. I am always asking, "what features do I need to get my map to look like this wonderful map, or that other gorgeous map?"

Early Version Image by Megasploot

Then I go and figure out how to keep it simple and easy-to-use inside my tool. Some example features that resulted from this process are the "raise" and "lower landmass" tools which draw land with automatic coastlines, and the river and path tools which add some natural kinks to the lines, so you won't have to do it by hand. If a feature can't fulfill my requirements, then it gets redesigned or tossed out the window. *Wonderdraft* isn't attempting to compete against programs like Photoshop. It's designed specifically for fantasy maps for cartographers who just want a painless way to transfer their ideas onto the screen and have it look professional. Making a good map should take minutes, not days.

I have a long list of features that I believe cartographers would absolutely want, and when those are completed and tested, I will release *Wonderdraft* into early access. I have another list of features that I believe are more quality-of-life improvements, which I am saving for the full release. Maybe there could be a future beyond what I have planned, but I will leave that on the drawing board for now.

We're excited to see Megasploot's map creation tool progress as it nears a full release. You can keep up to date on Wonderdraft as well by subscribing to the dedicated subreddit. Early access can be found at www.wonderdraft.net

DESIGNING A CULTURE'S AESTHETICS

Culture *Theory and Analysis*

Ademal

"We don't go into the future from zero, we drag the whole past in with us."

— Syd Mead, in an interview with *curbed.com.*

Overview

What is a world's aesthetic?

A world's aesthetic is the look of that world: the visual design of the fashion, architecture, tech, and other features and details. It tells a story about the cultures of your world.

In visual mediums such as film, comics, and art, this quality is more blatant because you can see the design, but in text mediums it can be less obvious—details taken for granted by audience and author alike.

No matter what medium you're expressing your setting through, the aesthetics of it can tell your audience how to see the world. The design can also express cultures within and the conditions and events that shaped them.

In this article, I hope to arm you with ways to focus on and describe these details to make your writing, art, and world design feel unique.

Starting out

Take it from the top.

To answer what the aesthetic of a people is, you must truly understand them. Knowing the answer is a good indication of how much you *really* know about the culture.

We'll be hitting a few points in this article:

- How to develop aesthetics from scratch using the conditions a culture grew in
- How to advance aesthetics over time to reflect advancements in materials and methods
- Examples of aesthetics and design from worlds in popular media

With that, let's dive right in.

Developing Your Aesthetic

A step-by-step.

When developing the aesthetic of a culture, start by assessing the key points about it:

- The challenges they face (or have faced before)
- The materials and tools they have
- Their beliefs and customs

Unless your people are newly evolved, or have emerged from a social vacuum, you will have to reach back into their history for these aspects, rather than looking at their present.

Challenges

The dangers they face.

Cultures do not grow in a void, they grow within a set of conditions. To use some archetypes: Elves come from the forests; drow from the Underdark; humans from the cold north; demons from hell.

Every origin presents its own unique challenges. These challenges shape the cultures which face them and what technologies, buildings, and clothes they make, among other details.

Make a list of all the challenges your culture faces, ordered by severity. These challenges can come in any form and can even be a seasonal threat. Consider terrifying predators, difficult or scarce prey, severe seasons, problematic terrain, raiders, magic storms, vermin, disease.

> *The Ageran Flats are hard and salty, impossible to plant crops in, remarkably hot, and prone to flooding in the wet season.*

All art in "Designing a Culture's Aesthetics" is credit of Anna Hannon.

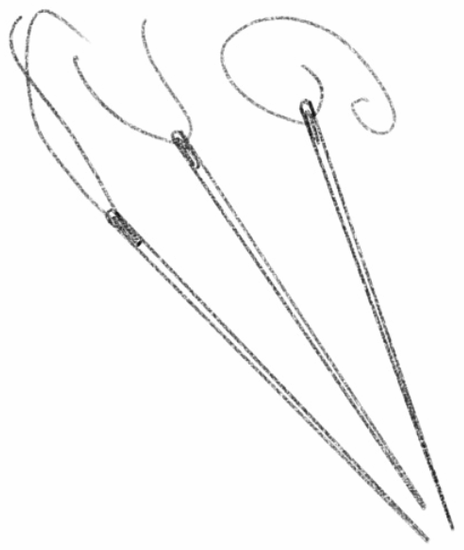
Dokor's Skull is an island afloat on a maelstrom of chaos. The soil is rich with viscera spilled by demonic creatures locked in a vicious cycle of mutual predation.

These are your building blocks going forward, so dig deep into the setting and think about what dangers your people have to deal with. It helps to research any real-life equivalents and see what they face as well. History is the best teacher.

Tools and Materials

And the solutions they provide.

You've got your list of challenges, great! Now, what do they have available to overcome those challenges? What materials do they have? What technological levels have they achieved? Can they spare extra hands to have specialists, or is everyone expected to wear multiple hats? Are there any tools, skills, or magics unique to them that they can leverage?



Same as with your challenges, make a list of the resources, materials, and tools available to your culture. Are there any special technologies or techniques which would help them, or which they would develop for this purpose? What organic resources can they make use of? What ores and minerals can they use? Do they have magics or skills that we might not—features of physique or mind that allow them to overcome their challenges?

Equally important is to list what resources, materials, and tools they *don't* have. Remind yourself not to take amenities in our world for granted as they could be unavailable elsewhere. If you think of some, add those to your list of challenges.

The Ageran Flats are an unlivable hell to most, but there's an unseen bounty. The salt makes for good preservation, and the caves which run under the flats are resplendent with rich pools full of thick, strong kelp, delicious fish, and hearty mollusks. The stone is dense after those first few meters of clay and sandstone, ideal for building strong fortresses.

The dwarves thrive here. Taming the caves is easy with eyes which cut through the dark and picks which pierce the stone. The tricky part was finding the pools, but perseverance lead them true.

-

Dokor's Skull is as inhospitable as they come, so of course it's the goblins who happened to have found a niche here. They ride the tumultuous air currents on leathered flesh-fronds from the gore-trees, hunting eye-bats with the thorns of butcher trees.

The goblins live on the underside of the skull, unscathed in their hanging village—only they, so light and so small, could manage to build their homes amid the fragile sinew vines.

Each situation comes with unique materials and tools, and the races living in those situations have used their unique skills or bodies to take advantage of it.

Take your peoples and look at the challenges they face. What is handy for them to overcome those challenges? What unique skills can they leverage?

Once you've answered these questions, you can begin shaping your cultural aesthetics from them.

Culture from Challenge

Yesterday's challenges become today's culture.

Nuanced culture doesn't happen overnight. The first solutions to problems are often ugly and haphazard, but as they are perfected and enter wider usage, their design and appearance will shift to reflect the beliefs of those who create them.

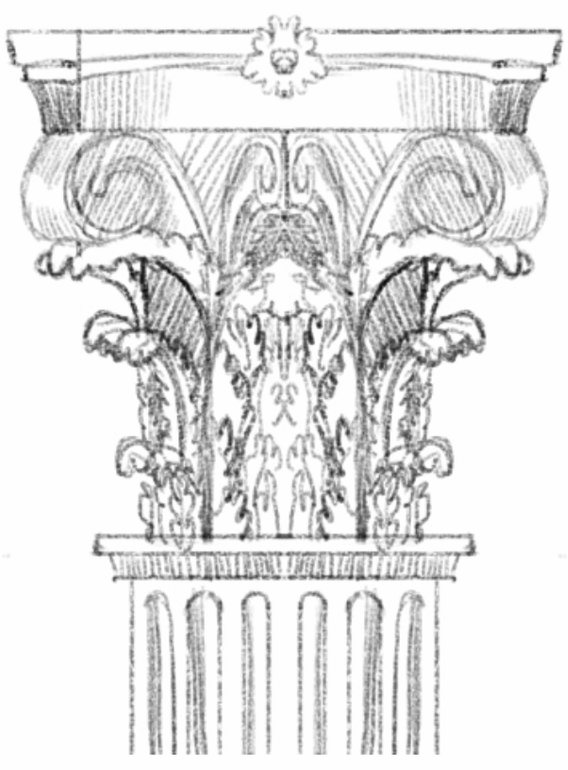
How their beliefs affects their aesthetics, or how their challenges shape their beliefs, is a very tricky question. Here are some pointers to get you started.

Intrinsic Value

What do they hold dear?

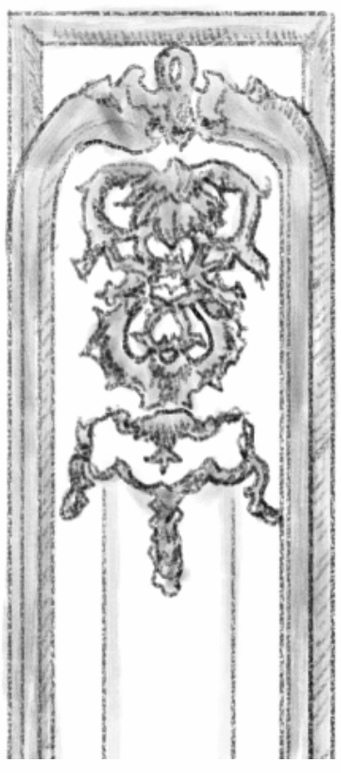
In all of the scenarios up to this point, I described how a people have survived their circumstances, but this is where it gets messy. Utility can inform aesthetic, but aesthetics and beliefs can create demands which become their own challenges and feed back into the loop.

Are your people more practical or grandiose?



A more practical approach to design often stems from necessity (either because resources are lean or because industry is young), so mass production of buildings, clothes, and other products is limited to simple designs. In hard times even the art may be simple—though perhaps it could be a feature of your culture that, despite otherwise being very practical, their paintings are incredibly elaborate.

Practical designs are easy designs: basic cuts, simple fabrics, earthly dyes made from common materials, and buildings with little aesthetic covering their structures. Most decoration will be added onto the design after creation; extra features such as patches on clothing, paintings in houses, and so forth.



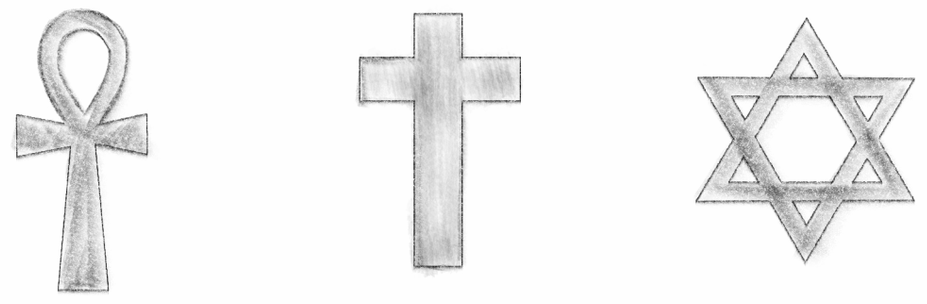
A grandiose approach to design is limited only by the creativity of its people and the materials they have at hand. This may arise from an extremely artistic peoples, or from a culture which has mastered mass production.

Grandiose designs are often flashy, using rare materials or complex patterns. Think of inset gems and intricate etchings, things which took a lot to obtain or do.

How individualistic are they?

How the people see themselves and their relevance to society changes how people decorate themselves within that society. Individualistic societies put more stock in the unique expression of the self, and so may offer more avenues to do that. In contrast, cultures focused more around the idea of the whole may put more stock in imagery of the family or community, things which show someone contributing to the whole instead of the self.

Are there any religious figures or symbols they hold dear? Elemental symbols?



These symbols may be the challenges they have faced or the tools they used to overcome them, as well as favored symbols of celestial bodies or geographic features.

A culture's values will reflect on all matters of their aesthetic. Keep that in mind when illustrating or describing their technology, architecture, clothing, and so forth.

The dwarves of the Ageran Flats have come a long way from scraping by in their underground ecosystem.

Now, their cities reach far above and below the ground, with halls cut from dark stone and decorated with brilliant glass so thin that it shimmers like a bubble. Their buildings are grouped close together to keep the streets shaded, paneled in white sandstone to reflect the heat upwards. Numerous wind catching towers suck the wind underground, blasting a cooling air through the aquatic caves, through the subterranean halls, and back up into the city streets.

Ageran dwarves wear loose, airy clothing made from interwoven and overlaid strips of kelp, rolled out, flattened, and bleached by the intense sunlight aboveground. Their clothes are pressure-stamped with the shapes of fish

among double helixes of kelp, representing the rivers which flow below the lands and the bounty which the dwarves could not have survived without.

Outsiders at first find it strange that a desert people would be adorned in the polished shells of mollusks and symbols of fish. Truly, the Ageran dwarves stand out among their peers.

The goblins of Dokor's Skull had a rough start of things. Just when they'd established a base of survival, wicked creatures slithered from the eyes of the skull—the serpents which had comprised Dokor's brain awoke from their long slumber. They feasted upon the life which had sprung forth from his nightmares and fed on his remains. Over the course of several horrific months of survival, organization, and resistance, the goblins shifted from seeing Dokor as a benign sleeping provider to a malign sleeping evil, a myth which echoes through their culture.

Although the goblins wear leathers of demon hyde and bear tools and weapons carved from bone and the thorns of butcher trees, do not mistake them for evil. They view themselves as a holy people, protecting not only their own kind, but those who live beyond their realm and who they've had only limited contact with. They keep the evil sealed away from within.

Because their ecosystem is limited and their population is steadily growing, the goblins had to learn to recycle. Every weapon, home, and scrap of clothing is ancient. Though the designs are simple, they have become unique by way of little changes over time—upgrades to the material or the function. It is customary to add your story to what you own: the inside of jackets are embroidered with

the names of previous owners; houses have walls with clay stucco murals furthered by each generation that lives there.

This tradition is furthered by the magic of the Skull, which imbues those stories, and the mediums used to tell them, with power. Some suits of Dokorian Goblin leathers are as strong as dragon leather as a result, for example.

The most common symbol is the symbol of Dokor's skull bound in chains.

Advancement over time

I recommend taking on this process in iterative steps: Take your culture at its earliest possible point; list their challenges, solutions, and values; and describe the aesthetics of their clothing, architecture, and decoration in a paragraph each. Then, jump to the next era and introduce new challenges, solutions, and values—figure out what will be kept from previous eras, what will be changed, and what will be discarded.

The more granular you go with your time-steps the more realistic your cultural shifts will feel, and you'll find it easier to have each period possess a unique look.

Examples in Popular Media

Black Panther

A recent stand out example of a well-developed aesthetic in media is *Black Panther* by Marvel. It had plenty of history from earth to build on and modern examples to run with, but it still took those concepts and expanded them out into technology, vehicles, and so many other rich details.

From the various tribes of Africa it derived more modern clothing. Yet, the film also took into account modern dandyism by having some characters wear flashy Victorian-inspired suits rather than more historical tribal-inspired clothing.

In tech and architecture, this historically-rooted style was again repeated, referred to without inhibiting the design. You can see this effect in the way the skyscrapers pay homage to ancient hut designs and the projectile weapons that still look like Zulu spears.

Syd Mead

If you have an even passing interest in science fiction, you have seen the works of Syd Mead. His concepts have been used in *Blade Runner*, *Elysium*, *Battlestar*, *Star Trek*, *Tron*, *Alien*, and countless other popular movies, shows, games, and installations. He is a self-proclaimed "visual futurist" who views science fiction as 'reality ahead of schedule'.

His experience in worldbuilding tech and aesthetic comes from a history of at Ford. He worked there designing the look new models for a while before moving to California to work on *Star Trek*, *Tron*, and more.

In Text

Dune, *A Song of Ice and Fire*, and *Dinotopia* are all examples of stories where the aesthetics of the world are well-described. Their designs lendunique flavor and a sense of deep history to the cultures portrayed.

Think back on some of your favorite stories. Are there any scenes which leapt out at you as a great description of how to see that world? If you can't think of one, challenge yourself to design one as practice.

Farewell

The principles you take from here are applicable to numerous other aspects of your world. Remember, begin with a necessity, then determine a solution given available resources, and finally apply existing beliefs and customs. Do that and you'll have a unique look and feel to your cultures, one entirely your own.

Happy Worldbuilding!
—Ademal, World Anvil

GUIDE TO CONSTRUCTED LANGUAGE II: GRAMMAR & STRUCTURE

Linguistics

Daniel Baker

“That time of year thou mayst in me behold
When yellow leaves, or none, or few, do hang
Upon those boughs which shake against the cold,
Bare ruin'd choirs, where late the sweet birds sang.
In me thou see'st the twilight of such day
As after sunset fadeth in the west,
Which by and by black night doth take away,
Death's second self, that seals up all in rest.
In me thou see'st the glowing of such fire
That on the ashes of his youth doth lie,
As the death-bed whereon it must expire,
Consum'd with that which it was nourish'd by.
This thou perceiv'st, which makes thy love more strong,
To love that well which thou must leave ere long.”

—William Shakespeare

Image Credit: Anna Hannon

A sonnet. Fourteen lines. Four stanzas. Four lines are given to each of the first three stanzas. William Shakespeare’s iconic iambic pentameter elegantly caps the poem. The rhyme scheme follows the pattern of the English Sonnet. All but four of Shakespeare’s 154 sonnets follow this pattern exactly. This restrictive form of the sonnet limits the number of ideas that can be communicated in this fashion. Even so, the words of the Bard have granted him immortality.

Japanese poets from the 17th century onward have preferred an even more restrictive format: the haiku. Haikus communicate two images and juxtaposes them in even less space, limiting expression to 17 syllables for each haiku. This form emphasizes the simple aspects of writing to rise above the tight frame it is placed in. Other attempts at constrained writing include Ernest Vincent Wright’s “Gadsby,” published in 1939 and written entirely without the letter “e.”

These constraints elevate a work of literature to a higher form of expression, yet all literature is a kind of constrained writing. For writers, the language that they write in serves as the primary constraint they work under. A language is not complete without grammar, a set of rules that orders the infinite possible combinations of sounds, letters, and words into meaningful communication.

Phonotactics

The syllable is more valuable than it receives credit for. More than an intermediate piece that fills the gap between a phoneme[1] and a word, syllables can be stressed. This brings with it a multitude of uses. Stresses provide rhythm and meter to a word or sentence, allowing for an otherwise dull phrase to contain an underlying

[1] *Phoneme—the base unit of sound.*

pattern. This underlying pattern helps the brain with the recognition of words in a sequence. Poetry and verse would not be possible without the important sense of rhythm that syllables provide. Stressed syllables can also add additional information to a word that is not communicated in its denotation. Additionally, stresses allow for the differentiation of certain homophones.

A syllable also carries a tone. The tone of a syllable, especially when compared to the previous and next syllable in a word, often communicates intention behind a word or sentence. Common examples in day-to-day speech include a sarcastic, sincere, or inquisitive nature that resides behind a sentence in English, each of which can be invoked by changing the tone of a single syllable. Some languages even allow for a word's definition or part of speech to depend on its tone. This quality is demonstrated in Swedish, which has two accents separated by differences in the pitch of stressed syllables. The syllable's pronunciation, whether with a high or low tone, changes the definition of a word.

Accent	Pronounciation (IPA)	Definition
Acute	/'mʊdɛt/	"The courage"
Grave	/²mʊdɛt/	"The Fashion"

Demonstration of tonality in Swedish, using the definite singular of "mod" (courage) and "mode" (fashion). Both these words are spelled "modet," however, the difference in tone differentiates the word in speech.

The rules by which individual phonemes combine to form a syllable are called phonotactic constraints, and the study of those rules is called phonotactics. The most general aspect of phonotactics is the shape, or structure of a syllable. A syllable must contain a nucleus, which may be preceded by an onset and succeeded by a coda.

The onset, nucleus, and coda form the syllable. Each of these three segments may contain consonants, vowels, or semivowels. A segment may also contain more than one phoneme, making it *complex*. An onset or coda may contain no phoneme at all, making it *null*.

Phonologists have developed a convenient notation for describing syllable structure. For example, the syllable structure of English syllables is (C)3V(C)5, indicating that an English syllable must contain a vowel and can optionally contain up to three preceding consonants and five succeeding consonants. "V" represents a vowel phoneme while "C" represents a consonant phoneme. Superscript denotes an upper bound on the length of a phoneme cluster. Subscript indicates a phoneme's index[2] when applicable; and optional components are enclosed in parentheses.

The phonotactics of a language also include more specific rules. Individual phonemes may be prohibited or required in certain segments of a syllable. For example, English prohibits the /h/[3] phoneme in the coda and the /ŋ/ phoneme in the onset. The /s/ phoneme is the only consonant that may begin an onset of three consonants.

Grammatical Category & Inflection

"I shall never forget a little man… whose name I have forgotten, revealing himself by accident as a devotee. … We were listening to somebody lecturing on map-reading, or camp-hygiene; … rather we were trying to avoid listening…. The man next to me said suddenly in a dreamy voice: 'Yes, I think I shall express the accusative case by a prefix!'

"A memorable remark! … Just consider the splendour of the words! 'I shall express the accusative case.' Magnificent! Not 'it is expressed', nor even the more shambling 'it is sometimes expressed', nor the grim 'you must learn how it is expressed'. What a pondering of alternatives within one's choice before the final decision in favour of the daring and unusual prefix, so personal, so attractive; the final solution of some element in a design that had hitherto proved refractory."

—J.R.R. Tolkien

[2] To be used when the order of a phoneme matters and the first consonant (C1) is differentiated from the second (C2).
[3] IPA notation. For an explanation, refer to the International Phonetic Association homepage. Sound clips for reference can be found under the "Handbook" tab on their homepage.

The accusative case is a peculiar tool. It indicates the direct object of a transitive verb[4]. In many cases, the direct object of a sentence is obvious, which raises the question of why it needs to be pointed out. Many languages have done away with it entirely. There is no such indication in English. Yet, the accusative case can avoid ambiguity in sentences with multiple objects in the predicate[5] and makes for smoother reading by not forcing the reader to look for context at all.

Cases such as the accusative represent only a small portion of what are known as *grammatical categories*: formal distinctions expressed through means other than nouns, adjectives, verbs, and adverbs. The categories of tense, number, gender, and possession are very common amongst languages. Without grammatical categories, language would be quite lacking. Descriptions would have no sense of time, quantity, direction, or responsibility.

A grammatical category is quite easy to indicate with a variety of means. The most commonis by inflection: the process in which information is added to a root word as an affix or internal change. The most common inflection in the English language is number, inflected by appending the "-s" or "-es" suffix to the end of a noun (i.e. *idea, ideas*). Tense must be inflected in English through the "-ed" suffix on a verb to indicate past tense, "-s" to indicate present tense, or the absence of a suffix to indicate future tense (i.e. *walked, walks, will walk*).

Romance languages have heavy inflection. Latin has an astounding number of grammatical categories to inflect. It uses five declensions, four conjugations, three genders, six cases, four moods, six tenses, and two voices. These cover the major categoriespresent in the language, each inflected as a suffix.

Case	Singular	Plural
Nominative	rēgula	rēgulae
Genitive	rēgulae	rēgulārum
Dative	rēgulae	rēgulīs
Accusative	rēgulam	rēgulās
Ablative	rēgulā	rēgulīs
Vocative	rēgula	rēgulae

Declension of the Latin word "regula," meaning "govern," demonstrating how case and plurality can be inflected. Diacritics indicate a long vowel.

Grammatical categories may also appear through word order. Some languages express case by requiring the subject[6], verb, and direct object be placed in a specific location in a sentence. French makes heavy use of this method and has a strict word order that prevents the need to inflect case at all. Although other categories such as gender and negation are inflected, the function of a word is easily communicated through its location.

Morphological Typology

For communication to be possible, information must be treated with care. A haphazard assembly of *morphemes* (the smallest unit of meaning) will convey very little. Every language has its own way to organize morphemes into meaningful words. Depending on how a language handles its typology, it will have two kinds of morphemes. The *free morpheme* functions as a complete word. If the language allows, other morphemes may be inflected or compounded onto the original morpheme, then known as the *root morpheme*. The *bound morpheme* cannot function as a word. It expresses an incomplete thought and must be attached by relation or inflection onto another morpheme.

Morphological typology is a method of classifying languages based on the presence of inflection and compounding in a language. Languages are placed on a scale between *analytic* and *synthetic*. An analytic language has very few morphemes per word, while a synthetic language inflects and compounds many morphemes into a word. In the most common model of morphological typology, there are four categories of language:

- **Isolating languages** are the most analytic, expressing no combinations of morphemes. Each word represents a single morpheme in a thought. These languages commonly incorporate logographic script.
- **Agglutinative languages** feature inflection, compounding, or both. Root morphemes can be accompanied by affixes; however, the root morpheme is always distinct from the inflected morphemes.

[4] Transitive verb—an action that is performed on a recipient. This recipient is known as the direct object of the verb.
[5] Predicate—The component of a sentence containing the verb.
[6] Subject—the component of a sentence containing the primary noun which is being discussed in the sentence.

- **Fusional languages** have no such distinction between the root and inflected morphemes. Inflection can modify the pronunciation or spelling of a root morpheme in addition to adding affixes.
- **Polysynthetic languages** provide the greatest possibility for morphological synthesis. These languages can express complete thoughts and even complex sentences as a single word.

This model is by no means perfect. So far, neither a completely analytic nor completely synthetic language has been observed to arise naturally. Languages also cannot always be placed into one category and one category alone. English is a very analytic language, having lost most of its inflection over time, and many linguists consider it to be an isolating language. However, it retains some inflection which can affect or not affect the root morpheme, allowing it to be categorized as agglutinative and fusional as well. Words such as "antidisestablishmentarianism" raise questions as to whether it should be considered polysynthetic as well.

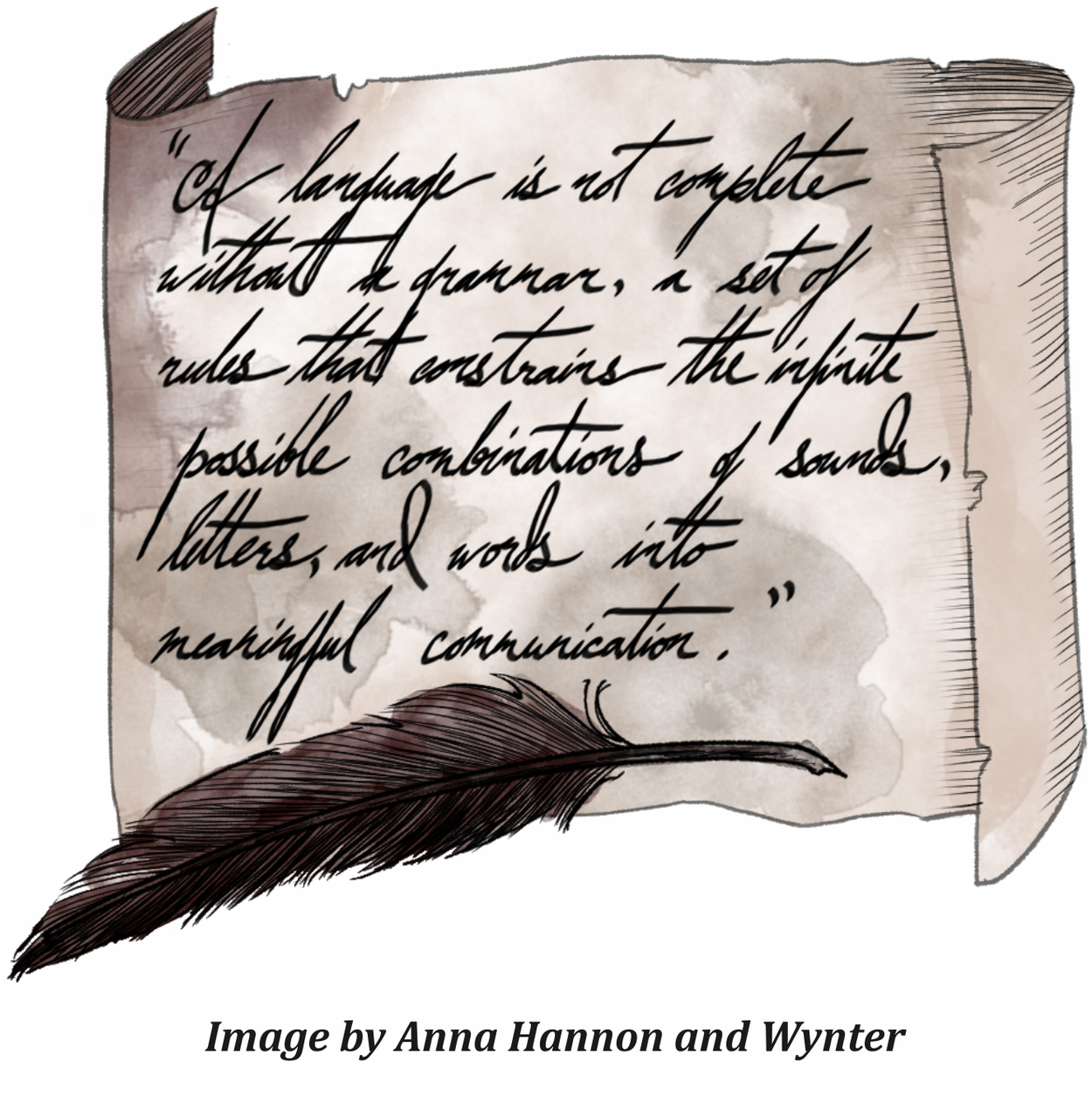


Image by Anna Hannon and Wynter

These inaccuracies aside, morphological typology remains an invaluable tool for the linguist to categorize language by the prevalence of inflection.

Practical Grammar

If you've read Part I of this guide, which appeared in *Volume 2 , Issue 3: Conflict*, your language should have a solid phonemic inventory and some guidelines for expressing phonemes in Latin characters. During development, you may have even come up with some phonotactic constraints as well! Now is the time to cement those. Take the constraints you have and write them down. For the rest, experiment! There are many interesting phonotactic constraints all over the world. For example, in Hawaiian, a syllable must end with a vowel, as the language's syllable structure is (C) V(V). Many rules can seem arbitrary, such as English's prohibition of the /ŋ/ phoneme in the onset, but each has a purpose. Following the /ŋ/ consonant with a vowel is stressful on my sinuses, but there is nothing wrong with that in the general case—presumably, the native speakers in your world are accustomed to it. Trust your judgment when choosing phonotactics. What sounds good to you is good for your language. Do not be afraid to be too restrictive, either. Constraints are good for

expression, just as poetry would not be nearly as impressive without meter. Again, this process will take time and revision.

I like to compare inflected grammatical categories to a self-serve buffet. It is very tempting to try and get it all, but it just will not fit on the plate. Unless you are constructing a highly synthetic language, too many prefixes and suffixes will burden a word down. Take it from a Latin speaker, memorizing 200 some-odd noun and verb endings is not enjoyable. On the other hand, make sure to get a nice variety! Take inspiration from other languages. Some interesting grammatical categories not inflected in English include evidentiality (in which source of knowledge is inflected in factual statements), affect (in which concepts like praise or dismissal can be inflected), and miravity (an inflected sense of surprise). If you are so inclined, you can even invent a new grammatical category, as anything that can be communicated can be inflected.

And finally, morphological typology must be selected. All four categories have their advantages and disadvantages. Creating a language in one of the less common categories at the edge of the spectrum can provide a very interesting challenge that will reward you if pursued. Fusional and agglutinative languages are reliable and easy for nearly all of the Western world.

Part III will discuss orthography, allography, and share advice for constructing a lexicon. Have you tried your hand at constructed language? If you have a tip you'd like to share, please send it in to Daniel at sailingyarddb@gmail.com along with any questions or feedback you'd like to pass along.

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THE BLACK PRIEST OF RASTROWEL

Culture *Religion* *Fantasy (High)*

Koray Birenheide

A chilly morning wind was blowing over the hilly pastures, and as Lyn went her way from the lighthouse towards the town of Manastrat she spotted heavy, grey clouds making their way towards the island of Rastrowel.

The sun, however, shone gently on the grassy slopes of Lake Tarrenvel. Its rays barely reached over the hill which Lyn began descending, stretching just past her and drawing golden specks onto the houses of Manastrat. The church glowed in gentle amber light, and the lake, famous for its pearlhood jellyfish, glittered like stars.

Lyn sped through the swaying grass along rocky sheers and fenced off pastures, never for a second fearing she might slip in the morning dew and hurt herself. While Uncle Nimrod often complained about her carelessness, and her regular adventures into the nearby woods, she herself never really saw the point in worrying when there was so much to see.

Image by Tristen Fekete

Coming up on the town, she saw several farmers draw carts full of vegetables, fruit, and gunny sacks filled to the brim, flowing in from the smaller trails that crisscrossed the differently-hued fields around Manastrat, joining and sometimes passing her as they headed towards the market. Herdsmen were leading their flocks of sheep or bulls out onto the pastures of Rastrowel and Shepherd Martin, a young boy no more than three or four years older than Lyn, came right past her. His flock washing around her, some of the sheep letting her pat them on the head as they passed.

"Morning, Martin!" she said, energetically waving with one hand while petting a sheep with the other.

"Souls be guided, Lyn!" he replied, waving his hand as well.

"You too!" She had never picked up on the religious custom that was so prevalent in Manastrat and the four other communities of Rastrowel. Since Uncle Nimrod wasn't a believer in the Church of Pure Souls, Lyn's upbringing hadn't been colored by their teachings, though they were quite unavoidable once she set foot into any of the towns. Lyn didn't mind them. The Church people were nice and everyone in town liked her, though sometimes she heard them say bad things about Uncle Nimrod and Makani because they did magic for work, and locals generally avoided the small HJT front desk; only seafarers from other islands sought business with the Ferries.

Stepping into the morning bustle, Lyn hopped along the cobblestone streets and headed down to the bakery.

The building was squeezed into a corner between a cobbler shop and a small house with pretty flowers below its window sills. It had a little bit of space for the customers to stand and a broad counter behind which all sorts of bread and buns were presented in wicker baskets.

"Well, who do we have here? Come to fetch the boys some breakfast, have you Lynlyn?" Baker Tom was a wizened old man with a paunch and a smile. His kind, green eyes twinkled at her from behind his bushy, grey eyebrows.

"Yes, sir! And I want a Lyn-bun! Lyn-bun!" she demanded playfully.

"Hm, well do I have something like that here? Let me check…" He pretended to rifle through the wicker baskets for a moment, before triumphantly lifting up a little sweet bread roll that had two raisins for eyes and hairlike extensions.

"Aw, no purple hair again…" she pouted, crossing her arms.

"I told you, Lynlyn, frosting is for birthdays! Now, what are you supposed to bring up?"

"One loaf please!" Her face lit up at the thought of breakfast. Though she would eat her Lyn-bun right away; no one up at the lighthouse had to know about them.

Tom rolled his eyes. "Lynlyn, there are four kinds of bread loafs here. What kind does your uncle want?"

"He said you know which one, and if you don't, he doesn't give two rusty keys which one you give me!" she replied with an endearing smile.

"Old sourpuss!" Tom grumbled, picking out a long white loaf, wrapping it up in paper.

"Sourpuss!" Lyn giggled.

"Now, don't tell him I said that…" Tom muttered into his mustache, handing her the package and her Lyn-bun in a wrapper. "You take care now. Souls be guided."

"You too!" she replied with a wide smile, which earned her an irritated look, and gathered the loaf and her bun before moving back onto the streets of Manastrat. Skipping merrily to the big fountain, she noticed that the Janoshes hadn't set up their stand on the lower market yet, so she would have to wait before getting the eggs. She sat down on the fountain wall, nibbling on her bun and watching. The townsfolk walked about the paving, gathering around the stands that farmers were setting up. People also crowded next to the statue of the mustache man by the fountain. A man on the other side kept talking in a loud voice, though Lyn didn't pay him any mind in the beginning. Half-way through nibbling her bun, her curiosity took over and she walked around the crowd to see what was so interesting.

On the other side stood the church's preacher, Father Stanislaus, passionately quoting gospel:

"There are in man's soul many holes, each longing to be filled. And on our path, we all see many glittering keys, each ready to fit into one of them. But whether ye pick up that bottle or eat until ye burst, ye will find that the more ye turn these keys, the clearer it becomes that there is nothing behind these holes. There is only one great gate within you, and there is no key that fits into it. For thou art the key!" he started pointing at random individuals in the crowd as he spoke now, "and the gate will open for thee if thou can forsake the crutches of thine base desires. Seek thy redemption within thyself, not in the arms of deceivers. Enlightenment comes not from magic, for magic is the hammer of Vinclav used to forge his lies. Enlightenment comes from knowing thyself, from kindness and from altruism. Give once and twice ye shall receive. Gamble once and twice ye shall lose. And may the blight mark those that fall for Vinclav's lies, and golden gears and harmony await those who show patience and virtue!"

Lyn knew about the blight: It was the sickness Lady Wisp was suffering from. Lyn also overate sometimes, so that point made sense to her, though as for the bottle… She would have to ask Father Stanislaus what that meant. Just when she was about to ask him, she noticed a strange man standing behind the preacher as he continued his passionate readings, stock still. He wore black boots and formal pants, a black jacket clasped with silvery buttons, and a black hat that cast a shadow over his eyes. He reminded Lyn of the undertaker, but the kindly Mr. Pauli didn't have that strange, heavy air about him. It felt as if he came from a faraway place, somewhere people didn't know how to smile. It unnerved her. And when he tilted his head up slightly, the shadow lifted from his eyes: They were hard and blue and stared directly at her.

She shivered as the scene around her began to blot out. The din of the crowd and of Father Stanislaus grew distant and muffled as those eyes captivated her. Then, she heard someone call her name: Mother Janosh had set her stand up and called Lyn over. Immediately, the strange illusion broke, and she scurried away from the crowd, only reluctantly snapping her head away from the stranger.

All the way back up the hill, Lyn couldn't help but think about the black-clad man, wondering if he had wanted to tell her something. But the idea of going back and talking to him scared her. She hugged her paper bag of groceries and walked up the trail to the lighthouse. The clouds had come closer to the shore, blowing in from the West where the town was, but still a fair bit off. The stiff breeze rattled the leaves of the ladden apple tree by the hut by the foot of the tower and on the porch sat Uncle Nimrod in his rocking chair, waiting for her, breaking waves of pipe-smoke on his broad gray-streaked beard. It didn't take long for her to reach the run-down hut with the weather-worn sign saying 'HJT Rastrowel Ferry Office' in large letters and 'Ship Mages for Hire' in smaller letters below that.

"I'm back, uncle!"

He patted her head with a calloused hand, welcoming her with his rough but fond voice, "Took your time again, hmm, Lynlyn? Come, everyone is waiting for breakfast." He ruffled her hair a little and stepped into the hut.

Inside, Makani had prepared the table with dishes, milk, and sliced apples from the tree outside. He now gave Lyn a wide grin as she entered, and she pondered about how his brown hair always looked like he had just weathered a storm, and how he only wore short pants, exposing his lean bronze upper body. Lyn wondered if he wasn't cold with the sun growing dimmer as the clouds moved in from afar.

Even Lady Wisp had gotten up today to eat with them. Her silky, white hair flowed down her shoulders as if it had been carefully woven from spider webs, and her blue eyes shone like glowing gems speckled with an eerie but intriguing green tinge.

Uncle Nimrod took the paper bag out of Lyn's hands, put it on the counter, and checked whether the wood burning stove was properly heated up. Then, after opening the stove top, he covered it with an iron pan. Whistling a merry tune, he cut up some leeks and onions for the omelet before cracking the eggs over the skillet with a neat little flourish.

"You're up, Lady Wisp! Do you feel a bit better?" Lyn asked with a big smile on her face.

Lady Wisp's voice came out husky, as it usually did, but her mood seemed pleasant. "Oh, yes. A petal flew in through the window and landed on my bed. It was so lovely I just had to get up and look outside." She smiled warmly at Lyn. "And now that you are back, my day has become even nicer," she said, absentmindedly tracing an

unrecognizable pattern with her finger on the wooden table.

"That's great!" Lyn replied. "We should go for a walk sometime. There's a creek in the woods I want to show you!"

"Yes, that sounds nice."

Uncle Nimrod had stopped whistling. For a while, it was very quiet except for the sizzling pan and the spatula's scraping. Then, he put the gold and green omelet on a large plate and served it on the tabletop. Finally, he cut some slices off the loaf and sat down with the three of them. "Well. Let's dig in. Lynlyn, pass me the salt, will ya?" he said as he portioned out the omlet.

She handed it over to him after he had put down the pan, and he thankfully placed it by his plate, holding the bread basket up to everybody so they could grab a slice. Then he spoke to Makani, trying to sound casual. "Looks like the Corvi boy will be leaving the day after tomorrow. Keep a good eye on his ship; and if you meet pirates, well… try to get captured if you can. If they see your license, they'll ransom you back to HJT."

Makani laughed nervously. "I'm sure that won't happen. It's just a round-trip to Saresham and back, the waters are pretty safe around here."

"If you say so, boy," Uncle Nimrod said, shrugging his shoulders. He turned to Lyn with a wink. "I didn't lose my leg somewhere around Porasta though."

Lyn laughed and mimed theatrically at Makani. "Oh noooo, help me, I am being kidnapped by pirates!" Though saying it suddenly made her feel a twinge of guilt, perhaps because her gaze passed over Uncle Nimrods stump. He had taken his metal leg off for breakfast. So she added more seriously: "Makani, don't get kidnapped by pirates. They're mean, and I like you."

"Well isn't that uh"—he raised a brow—"nice… I promise I'll do my best not to."

"I was on a pirate ship once," Lady Wisp breathed. "Their captain was much nicer than the bad man."

"Who was the bad man?" Lyn inquired.

Uncle Nimrod chimed in, giving Makani a meaningful look. "A story for another time. Lynlyn. Will you help Makani bring up wood for the lighthouse after breakfast?"

"Yeah, ok," Lyn replied, staring out of the window as she moved her last appleslice around with her fork absentmindedly. The storm clouds were much closer now. The phrase 'the bad man' had reminded her of the black-clad man. "Say, uncle, there was a strange man in town today."

"Oh, what's that? Don't tell me a magus did something stupid down in Manastrat. I've got enough trouble with the Church as it is…"

"I don't know if he was a magus—and he didn't do anything. He was just… strange is all. He wore all black from his boots to his hat, and he kept looking at me. He had blue eyes, but not like Lady Wisp's."

Uncle Nimrod looked up: "Oh? Where was that?"

"Down by the fountain. Father Stanislaus was doing preaching, and the man stood right behind him. He didn't say anything, but it was weird that he was behind Father Stanislaus because everyone else was in front of him. And he stared at me really long, and it made me feel weird."

Uncle Nimrod stood up clutching his fork, his face unusually pale. Then he sighed and sat back down. "Don't think too much about it, dear. But try to stay out of his way, he is probably with the Church. They don't like Ferries or their children."

Lyn didn't reply right away, but kept shifting the apple slice around her plate. In her mind it was a tiny boat and her plate was Lake Tarrenvel by Manastrat. The flickering lamp light reflected off the tin plate in strange patterns, just as the sunlight that fell on the pearlhoods' nacre. If she stirred the apple slice just right, she could move it around the tiny bread-crumbs that remained on the plate.

"Do you think magic is bad?" She did not look up, intently focusing on her self-appointed task. Well, it was just a game really.

"Do you think fire is bad? Or water, or wind? Earth, or lightning? We need those for a lot of things. A lot of good things. But, they can also hurt people. They aren't good or bad, they are

Image Credit: Koray Birenheide

just nature. When we perform magic, we just help nature do good things or bad things."

"Hmm." Then she told Uncle Nimrod about the approaching clouds, and he got into a very long rant about the weather and his bones all the way to the end of breakfast. After they had cleaned up the table, she put on a scarf on the Lady's behest, even though she didn't mind the slight chill of autumn, and stepped outside together with Makani.

Makani, who was still young and strong, was the best one suited for bringing up and chopping the firewood. He had learned water magic at Ka Hale Akamai on Ainan, which made it easier to bring up the logs from the foot of the hill where Dirk left them for the office. Most people from the town and surrounding land didn't come up to the lighthouse for the same reason they avoided the front desk by the harbor: because they didn't want to be associated with the Ferries.

On the way down Lyn danced impatiently around Makani, who kept a leisurely pace, stretching his bare arms unimpressed by the cool wind.

"Say, Makani, who do you think the black man was?" she asked him while bouncing up and down at his side.

"Hmm. A priest, I suppose."

"Isn't Father Stanislaus the priest here?"

Makani paused briefly, giving Lyn a strange look she hadn't seen before. "The Black Priests are different. They wander around a lot and look for people they think are bad. They hurt people like Lady Wisp if they find them, so don't mention her if he talks to you."

"Hmm." She noticed the pile of logs in the distance. "Can you show me how to do water magic? I want to be a Ferry too!"

He looked her up and down. Makani was almost twice her size and always had a light tan, matching with his thick black hair. He had the figure of a picture-book hero - though his shoulders weren't as ridiculously broad - and while he looked bored most of the time, there was a clever glint in his jade-green eyes. "I keep telling you it's not that simple. It takes a lot of training and mental attunement to the element you want to manipulate. Tell you what: I'll show you how meditation works this evening, and if you manage to do it one hour every day starting tomorrow, until I'm back from my trip, I'll teach you what I can. How does that sound?"

"Yay! Yes please!"

"I'll have Uncle Nimrod check that you don't cheat."

"I won't cheat, promise!"

It didn't take them much longer to reach the usual place that Dirk left the wood at, right next to the well. The lumber mill was to the east, further inland, and not far from the forest, and when he drove his oxcart to Manastrat, he dropped the share for the lighthouse here where the hill rose up towards the cliff.

"Alright then. Now, give me a moment to focus; I have to get the water going."

Makani breathed deeply with closed eyes, finding his rhythm. When he had it he took gently swaying steps and opened his eyes, making graceful, flowing motions with his hands and arms. He reached for the sky and a gentle stream of water came out of the well, washing over the logs, quickly lifting them up from the ground. The water then washed them into a pit which connected to a trench leading up to the lighthouse. Makani made the water flow uphill with precise and dancer-like movements, transporting the logs in a long line.

"Good. Walk up and down the trench and make sure nothing gets wedged, Lynnie."

Lyn obliged, jogging alongside the trench and keeping an eye on the logs.

Everything went smoothly, requiring only a tap here and there. Within an hour, they had transported all the logs up to the lighthouse. On the way back, she asked Makani: "Will I also have to learn to dance like that?"

"I suppose so, if you want. This is how I learned it at Ka Hale Akamai, but everyone does it differently. In Aquaris, they say old words to command the water."

"What, like 'seek thine redemption within thyself'?" she asked, her gaze wandering about. In the distance, at the foot of the hill, she noticed a black

figure looking up at them. Had the Black Priest followed her here?

"No—where did you hear words like that? Oh wait, don't tell me, Stanislaus has been yelling gospel all over the marketplace again," Makani said shaking his head. "These people are too quick to spread their hate around. On Ainan, everyone was much more in tune with each other. Mages, non--mages, foam-crowns: it didn't matter. All that mattered was that you had a good time and enjoyed life."

Lyn stopped. "Foam-crowns?" She tried to picture it, but what she was seeing in her head could not possibly be what Makani was talking about.

"Oh, that's what we called people like Lady Wisp over there. They have very dirty words for her people over here. I don't like saying them."

"Hm. But Father Stanislaus is very nice. He gave me candy during the Day of Wishing-Keys, and he's always kind when he talks to me or the people." She didn't want to reveal that she had actually gotten occasional candy outside of festivals, not only from Father Stanislaus but also from other townspeople. But if word got to Uncle Nimrod, he'd probably have a fit over healthy food and some such.

"Lynnie, I am not saying that he is a bad man. Just that he is misguided. Magic is natural, and saying that people who use it are bad people is a bad thing to do. If everyone believes that magic is bad, then they will start disliking even people who use it for good things; like your uncle and me. And, once they dislike us, it's only a matter of time until they start hating us and doing us harm. And if they knew Lady Wisp lived with us, they… well, they would be very angry, even though she is so nice. Why do you think Dirk doesn't bring the logs up to the lighthouse?"

"Because they're heavy?"

Makani stopped and held his sides. His somber mood evaporated as he burst out in laughter. "Hold on—" he keeled over, shaking violently as he kept laughing, "—Oh gates and gears, ha-ha! Please, never change Lynnie, you're the best!" It took a moment for him to recover, and they made their way back up to the lighthouse. He kept chuckling, though, as Lyn made funny faces and noises at him. Back in front in front of the hut they inspected the pool filled with logs from their earlier labor.

Makani skillfully picked them out of the water, laying them on their cut sides so they could dry off a little. "We don't want to get wet carrying these over. Here, I've stacked the smaller ones together. If you want, you can help me later by carrying some of them over with me."

"Of course!"

He ruffled her hair. "You're a good kid, Lynnie. We'll definitely take a crack at that whole meditation business later. Promise. Though I can't promise that it won't be too boring for you."

"Bring it on!" she said, and poking him in the side. "I'll meditate harder than anyone in the history of meditation has ever meditated!"

"I swear," Makani said with a laugh, "if you ever find your gate you'll have a crowbar in your hand. Well, let's go back inside. I need to prepare some documents for the client."

"That captain Corvi you'll leave with the day after tomorrow?"

"Mhm," he confirmed.

"Hmm, go on ahead. I'll come a bit later!"

"Gonna play in the woods again? Watch your step and don't stay out too long, or I'll be the one that will have to go and get you."

"Nah, I won't be far away."

"Alright then, see you a bit later," he replied and made his way back into the hut.

Lyn turned around and stepped towards the slope. As she expected, she saw the black priest coming up the hill.

"Hello, little girl," he said. His voice was dry and scratchy, with a lot less ruggedness than Uncle Nimrod's. He also seemed a little bit older, or at least his weathered face made him look so. And as he stood before her now, he looked her over from head to toe.

"Hello!" she replied, giving him a once-over as well. He still wore all black, even his socks, showing at his ankles. The only difference was that there was now a novel, well-crafted pocket on his belt, holding an elegant metal object with a

beautifully finished black handle that curved over. It looked too clunky for a dagger or knife and was too strangely shaped to be a carpenter's hammer. "You're a lot less scary when you speak!" she added with a smile as her gaze moved back up to meet his.

"We are often afraid of things we do not know," he agreed, nodding though he did not return the smile.

"Isn't that the truth! I thought there were giant monsters in the forest until my uncle took me for a walk there. It's actually really nice."

He nodded. "That is good. Monsters can be very scary. It is important for people like us to stick together so they cannot harm us, wouldn't you agree?"

"I suppose so, being together is better than being alone. One time, Uncle Nimrod and Makani were away for work and it was really quiet here. I went into town a lot so I wouldn't be alone. But at night, I got scared a lot."

"You live quite a bit away from the town."

"Yeah, I guess. But it's nice. We can look down on the ocean, and at night we turn on the light-house and it shines this huuuuge light into the distance. Monsters are afraid of the light, so they don't ever come near here at night. And during the day the sun is out most of the time, so we're pretty safe up here."

"Hm. You know, you have an unusual hair color. It is very pretty. Do you put something into it to make it look like that?"

"No, silly! You don't put color into your hair. It comes out with color in it!" Though the thought made her wonder about Lady Wisp. Had she taken the color out of her hair and put it somewhere for safekeeping? If so, how? Lyn liked Lady Wisp's white hair, but if she missed having color in it maybe she should offer to share some of hers. If the black priest could be believed, sharing hair colors was a thing.

"Is that so?" He paused for a bit and straightened up to look up towards the lighthouse. "The people here use magic, is that right, little girl?"

"Yeah, for work. They make ships safe on the ocean."

"And what about you?"

"Me? You mean magic? Uh, I haven't learned it yet, but maybe soon! I want to make water move around!"

"Is that so. And do you think the water wants to be moved around?"

"I never thought about that!" She said and furled her brow in concentration. The Black Priest waited as she thought it out. "You know, Makani says that I need to get uh… uh… 'attuned' to all the water in the world or something like that. That means getting to know it really well, right? And when I know it better, I can help it move where it can't, if it wants to."

The Black Priest adjusted his hat. "That is a nice thought, little girl. But you should be careful with magic. It is very dangerous. You make magic with your soul, but your soul is very precious. It is the world's gift to you, and you must keep it safe from harm. When you are not careful your soul gets hurt from the magic, and it will not know where to go when you die."

"Oh." She glanced back at the hut, suddenly finding the now looming clouds to be strangely oppressive.

"Do you know what this is?" he asked, pulling the object from his belt. It really was beautifully crafted, and looked arcane in its purpose.

"It looks a little bit like a club."

"It's a gun. When I press this trigger it will strike a bullet, and the bullet will fly out of this nozzle really fast. When it hits someone they get hurt very badly."

"Then why would you have it? Do you want to hurt someone very badly?" she asked uncomfortably.

"Sometimes I do. I hunt monsters with it, you see. That is my work. Sometimes, people that use too much magic turn into monsters. Some do bad

things to other people with their magic. Some damage their souls, and their hair goes white and their eyes glow blue."

Lyn's eyes widened to the size of plates, the rosiness fading from her cheeks. Had Lady Wisp's soul been damaged? What did that mean?

"A man made the bullets in this gun," the black priest continued. "He made them from metal and gunpowder." He lifted his arm, pointed the nuzzle towards the ocean, and pulled the trigger. Lyn fell backwards before looking up at the man in shock. Her ears rang from the loud bang. It was louder than the loudest thunder crack she had ever heard.

"Can you still hear me, little girl?" he asked calmly.

"A… you are a bit muffled…" she mumbled, carefully prodding her left ear.

"I'm sorry if I scared you. But this gun is a scary thing." He held it up in front of her. "Do you want to try for yourself?"

"N-no thank you!" she said firmly, shaking her head.

"Yes, I thought you might say that. You do not look like you wish to harm people. You know, when someone uses magic, it is like they are making a bullet. But they are not using metal and gunpowder. They are using their own souls to make bullets. They take a bit of their soul, and then they fire it. Magic is a lot like this gun." He stood up, holstering it. "You are a good girl. So I am sure you will not pick up that gun either. I am sorry I scared you at the market. I couldn't help but notice that you have an unusually strong soul. You could make very big bullets. If you make bullets too big, you might become a monster too. And I do not want to use this gun." He turned away from her.

From behind them, the bone-shaking scream of Uncle Nimrod blew past her: "GET AWAY FROM HER, YOU DAMNED FIEND!"

With the scream, a powerful gale flowed around her and struck the black priest in the back. The wind knocked his hat off his head. He bent over to pick it up before dusting it off briefly, then lifting it up to his head. As the Black Priest walked downhill he uttered the words: "Souls be guided."

To read future issues of Lyn's story click here.

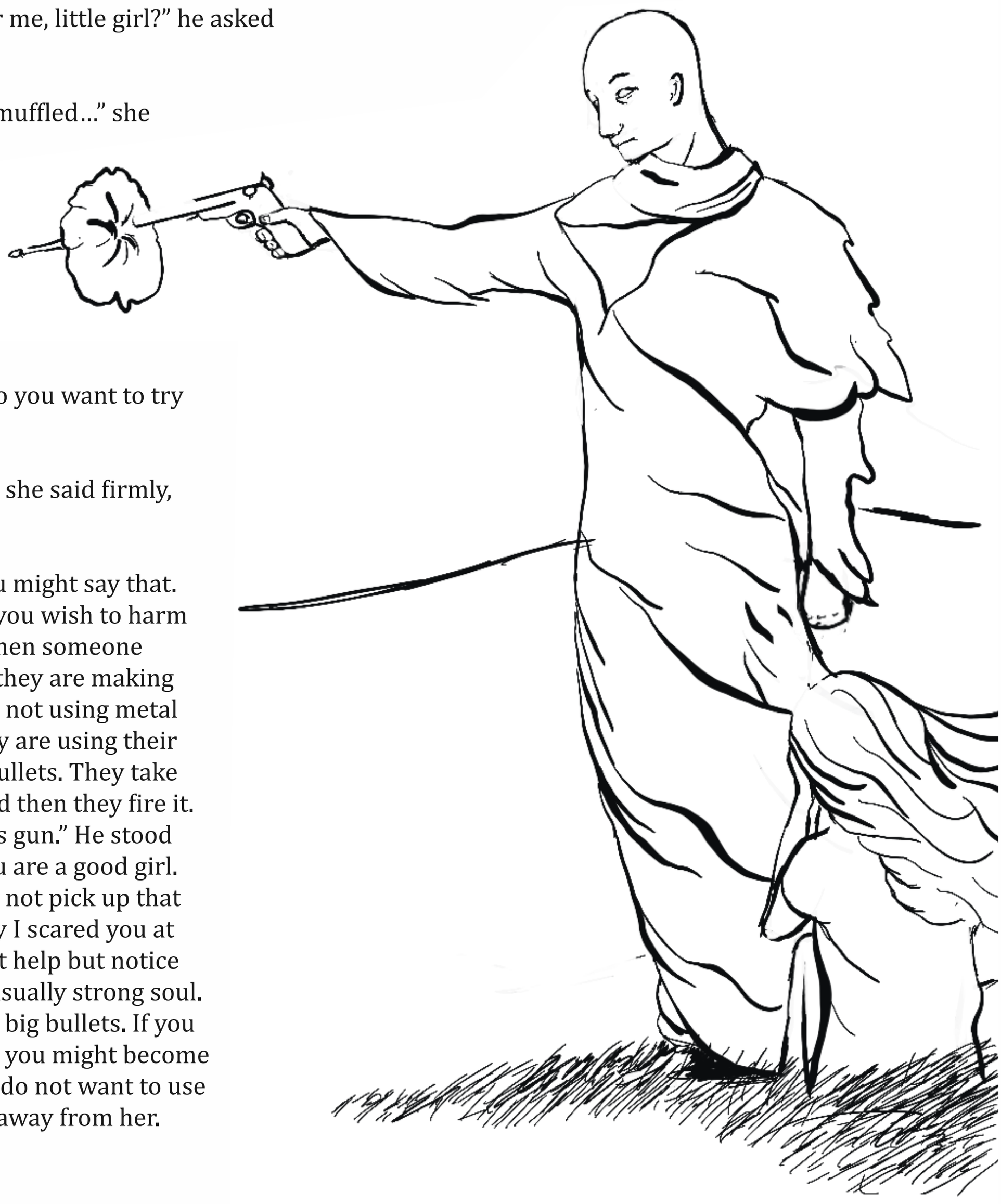


Image Credit: Tristen Fekete

ASK US ANYTHING

Additional Materials

BH Pierce

This Ask Us Anything is presented by a senior member of the Amalgamated Order of Interdimensional Persons, Percival Aluminius Illumnius, Adjunct Professor of Gateways, 3423 WestNorth Street, Dunny-on-the-Spire.

From M. E. White:

I've always wondered, when planning out a government or legal system how in depth I should go when it comes to individual laws? Should I aim to know every law, or the just the basics of what an everyday person should know? I'm guessing the answer is somewhere in between, but this (and my lack of legal knowledge IRL) has always tripped me up.

While it is a truly noble goal to write a whole law code for your setting, it is an infeasible one, especially for those without the exhaustive education an adjunct professor such as myself possesses. Even then, the sheer volume of the task is stupendously monumental. For example, in the Sovereign Nation of Canada there are currently 4.5 million laws. That figure only covers laws at the Federal level, not provincial or local ones. Developing what laws an average person might know is a good workaround, until it is pointed out that there are an abundance of common people. A factory worker would have a good grasp of workplace safety laws, while a farmer would know laws pertaining to water rights better than his own fields. I have also noticed that students have an encyclopedic knowledge of how late a professor can be before they're allowed to leave.

A better way to do this is to hone your knowledge of laws that are pertinent to your world or the story you are telling therein. For a world built around pirates, you will need to know the laws of the sea. If you tell a tale about a treacherous aristocratic court, then you must have laws of inheritance settled. Neither of these settings would require you to pen laws pertaining to the smelting of copper. The Law is only one aspect among many in a constructed world, develop it as much or as little as needed.

From Strongly_O_Platypus:

Where do you strike the balance between inserting your own personality into your world and giving it variety? I feel like my worldbuilding tends to be a reflection of my own interests and philosophy as much as creation of a nuanced setting.

A world is a mirror. Not literally, of course. Although.... perhaps sometimes literally. It wouldn't surprise me if someone had made a world built entirely of mirrors. In fact, I might have read a travel journal on that some years ago... But, I digress. A constructed world is a metaphorical mirror of its builder, and where you lack nuance and variety it will as well. One effective way to get around this is to work with a partner—preferably one of a different background—and draw upon their knowledge. Perhaps you have a penchant for creating vast integrated armies with tanks, helicopter support, and satellite systems that circle the globe, donut, hexahedron, or whatever shape your world happens to be. Proud of your accomplishment, you wonder just how this military gets its funding and you realize you know little of

If you would like to have one of your questions answered by me, please send it to one of the following locales: contact@worldbuildingmagazine.com, Discord, and Twitter. Some Junior members of the Amalgamated Order of Interdimensional Persons will sort through them and select the most pertinent ones for my perusal.

economics. At this stage you could reach out to another worldbuilder, one who takes peculiar joy in crafting economies, and seek out what insight they may give you.

Another way to add variety and nuance to your worldbuilding is to find your patterns and break them—like a mirror. Spend all your time making cities? Venture beyond the walls, into little towns and farmers' fields, and see what fun can be had. Are all your settings on islands? Time to spend some time in a desert. All governments you've designed are republics? Give good old monarchy a try! Never shy away from areas you know little about, look to history and fiction for ideas on how others have done it. Then, steal shamelessly. Expanding your own horizons will expand the horizons of your world as well.

From Cryssalia Noire:

I would like to insert some of the words from the languages I created. But how much is too much? Does it have to be sporadic or continuous?

AAh-ha! This is a common one. So common, in fact, that the Interdimensional Commonality Cataloguing Endeavour has an entry for it. In this reality I think it is known as "Television Tropes".

Words specific to your world can be used to give it strong flavor, but be wary of going overboard. While there are few greater joys in life than building your own language, hurling new vocabulary at your audience at all times will drive most away. A good rule to follow is to only use unique words when presenting something from your world that is unique. If it hops like a rabbit, breeds like a rabbit, and fulfills the same ecological niche as a rabbit, don't call it a *Smeerp*. Even if an aspect is not unique, but is vital or central to the world or the story, then it is wise to give it a unique name. For example, suppose the Warring States era in Japan was a worldbuilding project made for European audiences. While the Samurai are similar enough to Knights, you would still want to call them Samurai as they are absolutely central to that period in history.

In any case, if something must be said in a fictional language, be sure to provide enough context around the foreign term so that your audience will be able to infer what is being said. Additionally, ensure your words can be substituted for others to prevent overuse. Junks and Galleons are two very different things, but both can be described by the word ship. Knowing when and when not to use your fictive words is akin to walking a stylistic tightrope; with practice you will master the art.

PROMPTS

It's easy to get stuck, hit writer's block, or overlook small details. We would like to combat these issues by asking our readers questions about their worlds that they may not have thought of and offering writing prompts to spark their imagination. If you would like to write a short story based on one of the writing prompts, or have a prompt you would like to share with us, please submit it to contact@world-buildingmagazine.com or on Discord/social media.

Submission Requirements:

- The file must be no longer than 5,000 words
- The file must include title and author(s)

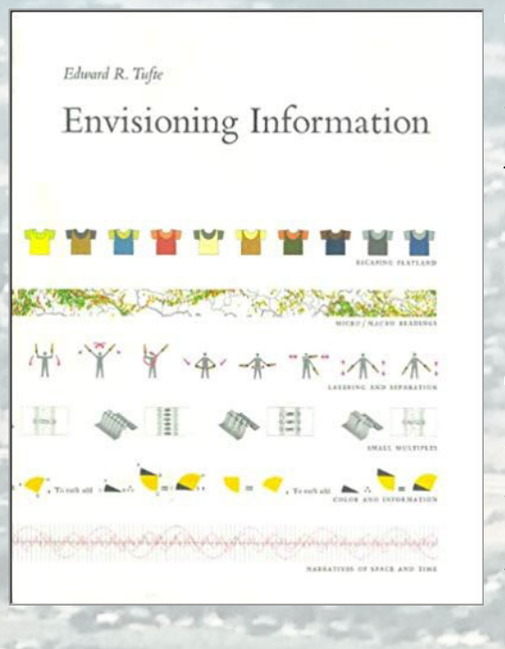
Worldbuilding Prompts:

- Does stand-up comedy exist in your world, and to what extent? Who are some of the most famous/ infamous comics? What do they do?
- How did maps of your world change as new civilizations rose and fell from power?
- How is necromancy (or resurrection/animating the dead) viewed in your world? What is its legal status? How easily accessible or accomplished is it? As a result of these factors, how do people view death?
- Who made your world's most influential maps? What kind of journey did they go on to gather their information?
  Prompt by chasecharmer from World Anvil.

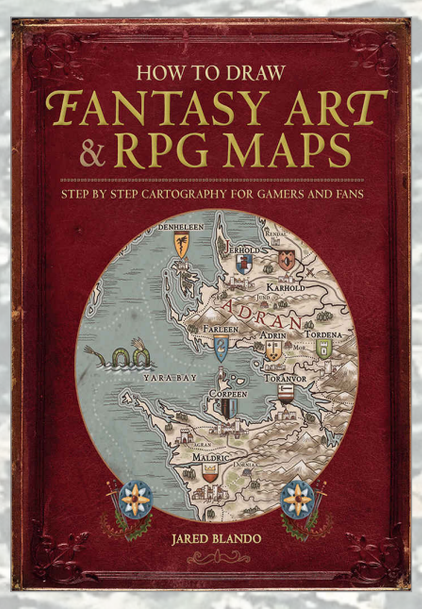
Writing Prompts:

- Write from the point of view of a recently reanimated person.
- Gods are real and an illness is wiping them out.
- Tell a fable from your world–a story with intent to teach some lesson that could only be taught by those people.
- *"I do not know. No one from my country has seen these waters."*

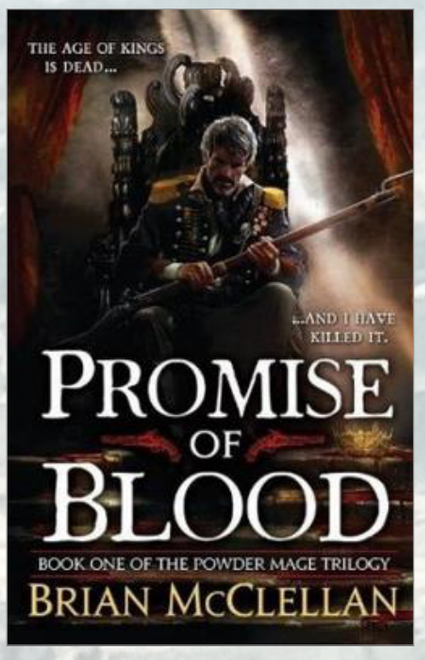
STAFF PICKS



Title: *Envisioning Information*
Author: Edward Tufte
Original Publisher: Graphics Press
First Edition: 1994
Tufte is the prophet of information design. All his books are revelations, but this particular one, focusing on how to "escape from flatland" is crucial to a cartographer. If this is your first exposure to his work you'll never look at graphs, maps, and charts the same again.
Chosen by: Overprepared GM



Title: *How to Draw Fantasy Art & RPG Maps: Step by Step Cartography for Fans*
Author: Jared Blando
Publisher: IMPACT Books
First Edition: Exactly what it says on the tin. Tips for better fantasy maps.
Chosen by: M.E. White



Title: *Promise of Blood*
Author: Brian McClellan
Original Publisher: Orbit
First Edition: 2013
The first of *The Powder Mage* trilogy, *Promise of Blood* is the French Revolution with wizards: flintlock fantasy at its finest. I mention it in this issue because the maps change based on events that occur during the books.
Chosen by: Adam Bassett

Title: *The Touchstone Trilogy*
Author: Andrea Höst
Original Publisher: Andrea K. Höst
First Edition: 2011
A warm read that's part *Wizard of Oz* and part *Robinson Crusoe* but with the main character being Willow from *Buffy the Vampire Slayer*. Except Willow is Australian and Oz is set in the future. And, eventually, she joins a psychic space ninja force that explores the universe and protects the world against monsters.
Chosen by: Overprepared GM

Photo: Taelynn Christopher on Unsplash

MEET THE STAFF

StronglyOPlatypus, Editor in Chief

Hi worldbuilders, I'm StronglyOPlatypus. The O stands for Opinionated, because I'm a pretty easy-going, unassertive person who likes to contradict himself. I'm the new Editor-in-Chief of Worldbuilding Magazine, so my job is to make sure everyone else does their job, write the Letter from the Staff, make decisions, and talk to contributors and partners among other things. I've been part of the magazine since its inception, and it's been an amazing experience.

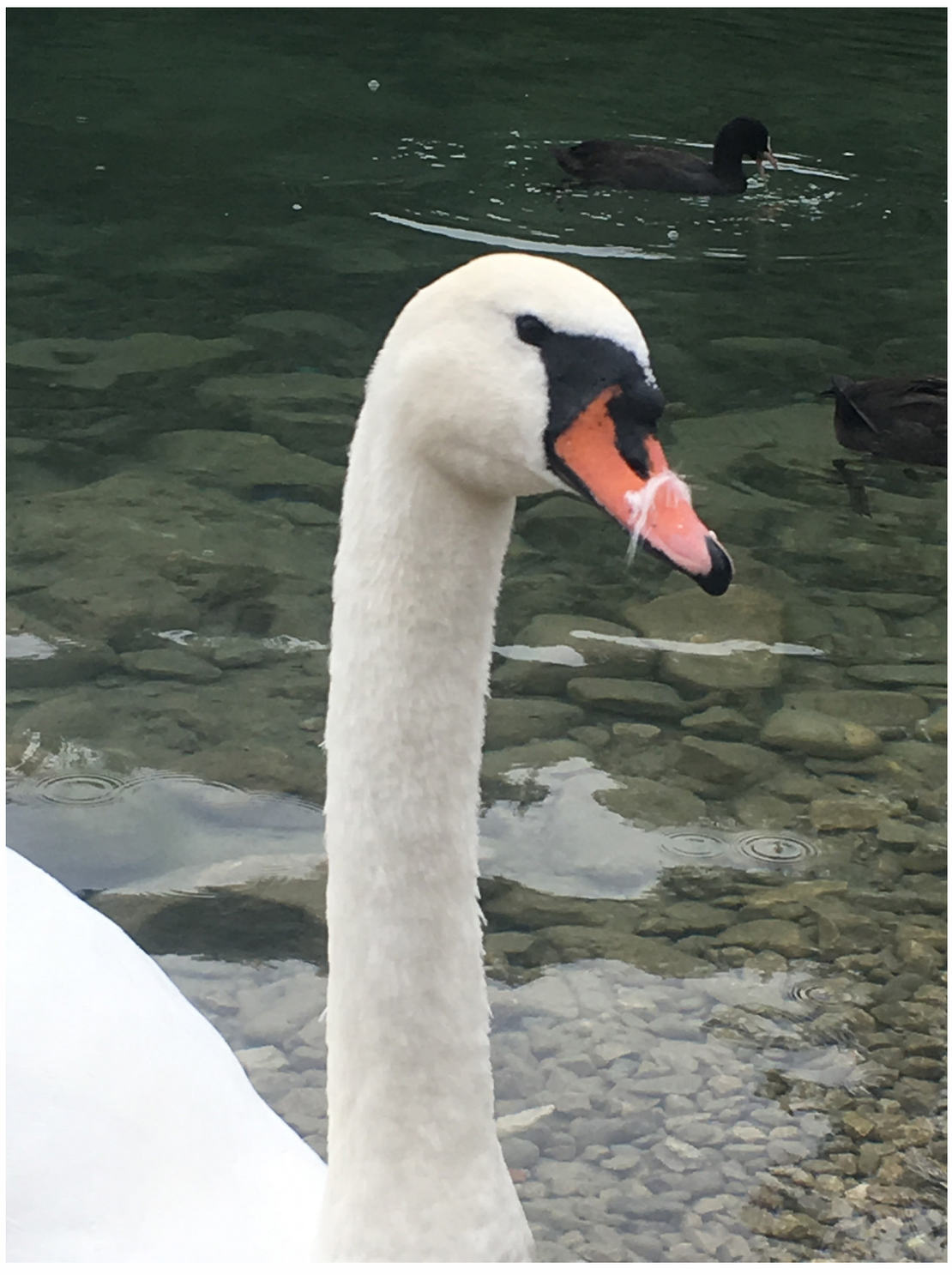


Photo: StronglyOPlaytpus

Aside from the magazine, I'm currently working on a semi-serious fantasy novel about an assassin with a conscience, his target, and the centuries-old ecological mystery they accidentally thrust themselves into. They travel into a forest of mysterious origin in pursuit of answers and have a lot of fun (read: confusing and terrifying experiences). It's filled with adventure, sarcasm, and ancient religious conspiracies. If you see any stories by me in the magazine in the coming months, they'll most likely be a part of that world. I'm also a chronic Dungeon Master in need of a group, and a creator of occasionally half-decent drawings.

My interests include linguistics, history, physics, and reading great stories. I like power metal, classical, and folk music with a little bit of a bunch of other genres. Big surprise, I really enjoy media with good worldbuilding! If you feel the same, boy do I have a great magazine for you. Thanks for reading my little description of myself, and I hope you enjoyed this issue!

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