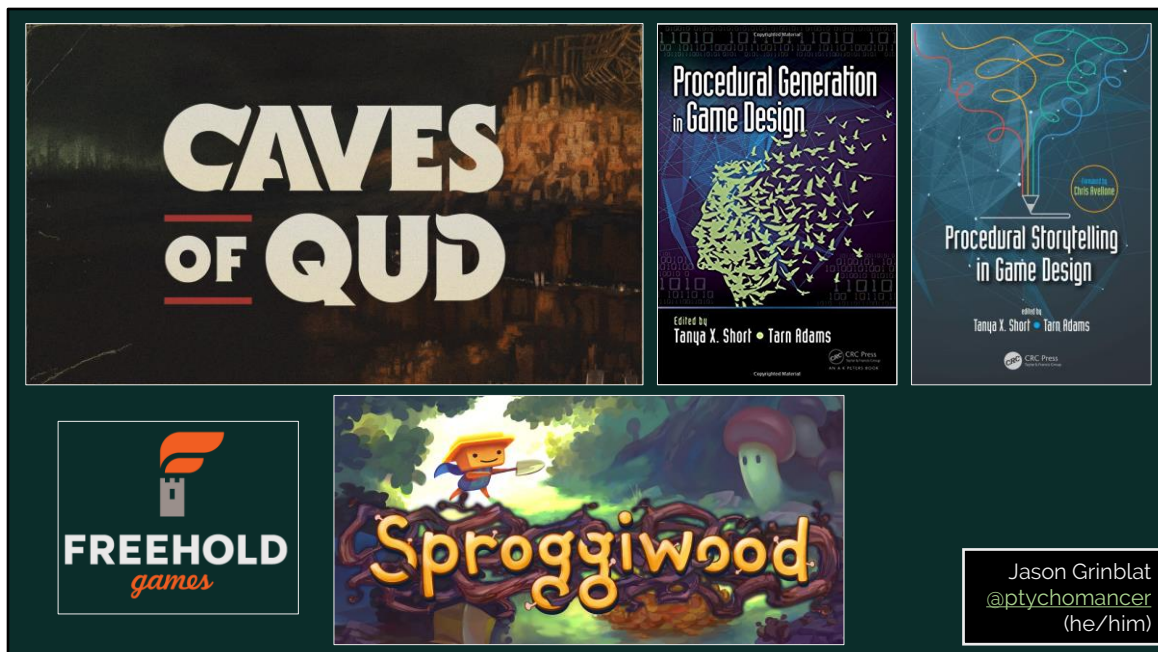
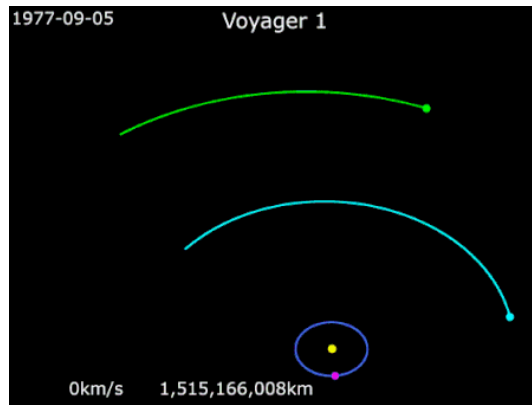


Welcome! I'm Jason Grinblat (he/him), co-creator of *Caves of Qud*, an expansive, open-world roguelike that's been in development for over ten years. Today I'll be giving a talk about what it's like to worldbuild for a single game over the course of a decade.



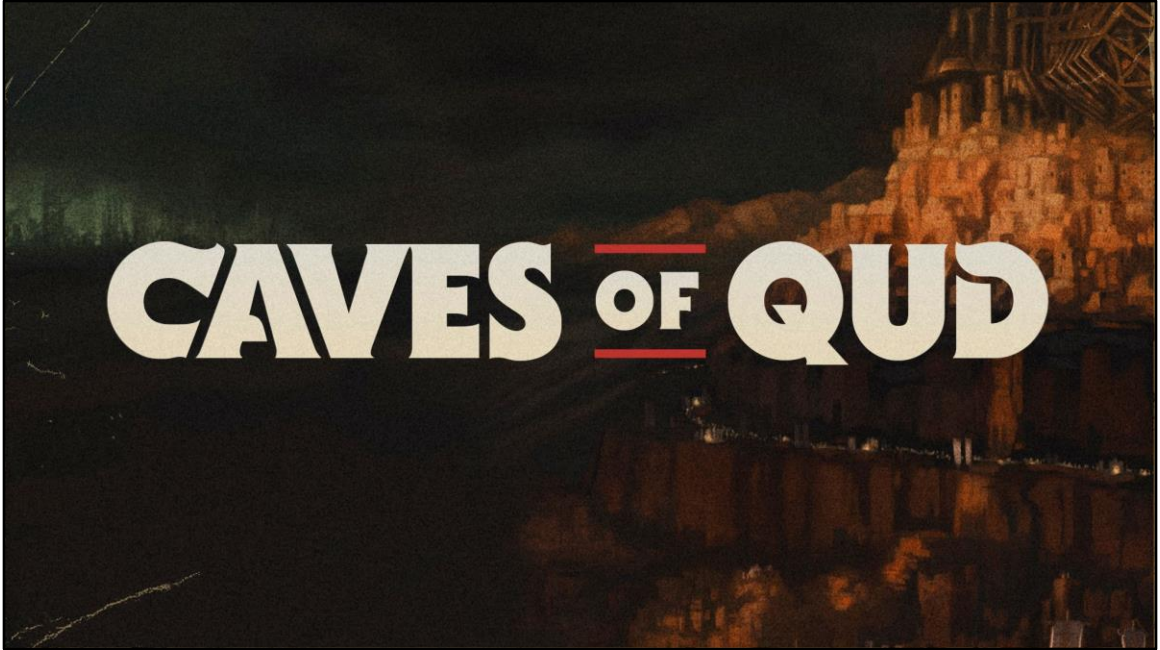
- I'm Jason Grinblat (@ptychomancer).
- In 2006 I co-founded a tiny indie studio called Freehold Games.
- We've been working on *Caves of Qud* for over a decade, since 2007.
 - Qud timeline: dev starts (2007) → alpha release (2010) → break for Sproggiwood (2012-2014) → Steam EA launch (2015) → I go fulltime (2016).
 - We start to pick up contributors in 2015.
- In 2014 we released a smaller roguelike, Sproggiwood.
- I've also written chapters for two textbooks on procedural generation: *Procedural Generation in Game Design* and *Procedural Storytelling in Game Design*, edited by Tanya X. Short and Tarn Adams.

creator
project #1
project #2
project #3



This is the Voyager 1 probe slingshotting around Jupiter and Saturn. I like this picture as a metaphor for one's creative trajectory across multiple projects. You make something, you learn from it and your path is altered, but ultimately you escape each other's orbits and move on.

(img: <ftp://naif.jpl.nasa.gov/pub/naif/VOYAGER/kernels/spk/>, NAIF, NASA by way of https://commons.wikimedia.org/wiki/File:Animation_of_Voyager_1_trajectory.gif)



Caves of Qud is a decade-old, ongoing, accretive project with an active player community for most of its development life, so the picture looks a bit different.



creator
ongoing project
community

The game, the community, and I all exert force on each other, continually, creating a three-body problem-like dynamic. I'm constantly reckoning with the question of how much of my evolving design ethos to back-propagate into the game, how to manage community expectations, etc.

(img: https://commons.wikimedia.org/wiki/File:Three-body_Problem_Animation.gif)

- I combat's gravity well
- II soft edges
- III the game as its own fan fic
- IV a warm place

Today I'll be sharing four examples of how the gravitational bodies in this system exerted force on each other in unusual ways.



Caveats

- Not an instructional talk
- “I” is just shorthand
- 10-year dev cycle: not recommended

Caveats:

- This is a case study, not an instructional talk. Few imperative sentences.
- “I” is just shorthand: *Caves of Qud* has always been a collaborative effort.
- We never expected to be here and don’t recommend using *Qud*’s long dev cycle as an argument for the business viability of longform game projects. That said, *Qud*’s story is worth telling.



- Roguelike
- RPG
- Simulation
- Wordy
- Science-fantasy
- "Dying Earth" but burgeoning
- Semitic influences
- Maximalist

Caves of Qud
Freehold Games (2010)

Caves of Qud:

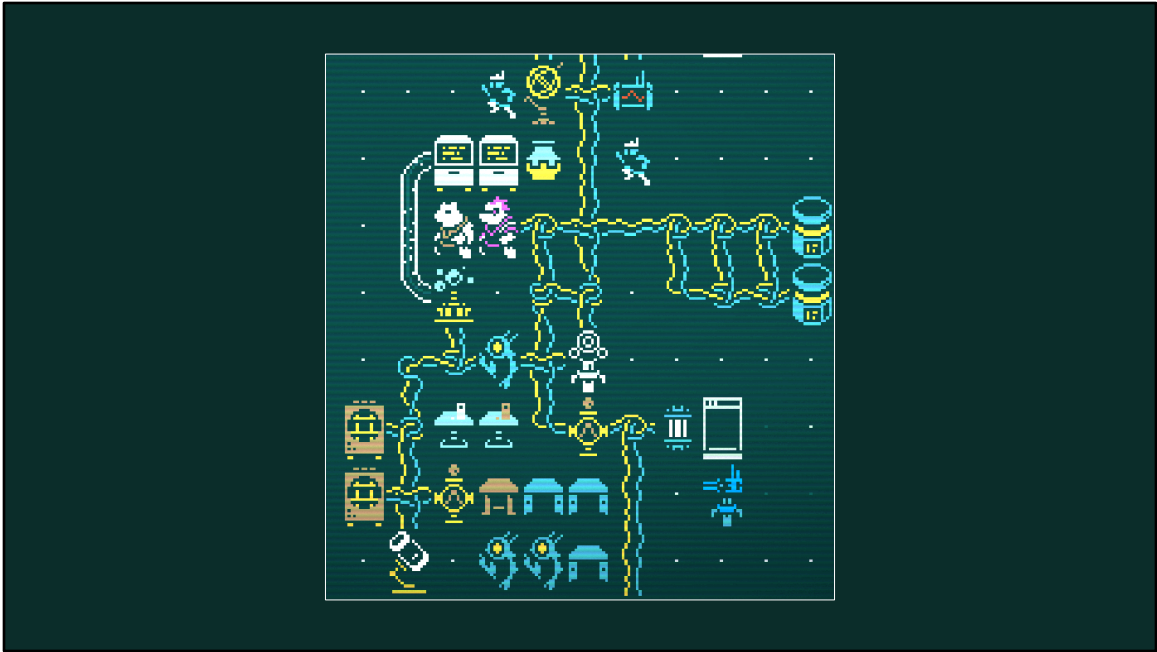
- An open-world, science fantasy role-playing roguelike.
- The tagline is: "Chisel through a layer cake of thousand-year-old civilizations".
- It's inspired by New Wave sci-fi and weird fiction and is set in an unrecognizable world where animals, plants, and robots have been uplifted to human-level intelligence, and humans have become vastly and diversely mutated.
- It weaves a traditional RPG narrative through deep physical, social, and historical systems, and so it's very much a hybrid hand-crafted and procedurally-generated project. On the order of 75,000 words.



Here are four screenshots that speak to the soul of the game.

This is the mayor of a procedurally generated village, who happens to be a tortoise. Each legendary creature has a procedurally generated backstory that hooks into the game's faction system.

If you were to treat with Sage Murlale, your reputation with antelopes and fungi would decrease, leading to in-game consequences.



Technology is important to *Caves of Qud*, both its reclamation from the diegetic past and the culture that's formed around it in the diegetic present. This is the subterranean workshop of a monastic order of quilled albino cave-bear tinkers. You can visit it in game.



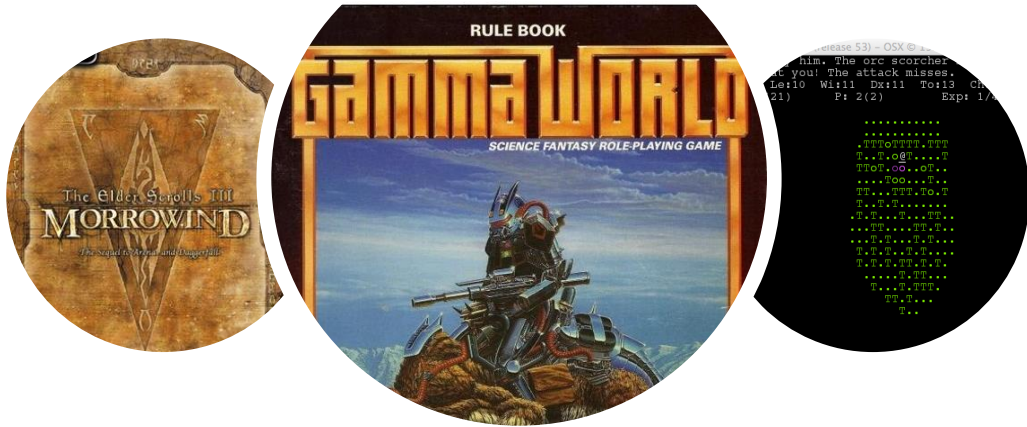
Caves of Qud is obsessed with diverse body morphologies. Here a player character has swapped bodies with a giant lizard and infiltrated an ancient tomb to read the hagiographic murals engraved on the walls. A pair of mechanic slugs stand guard over the tomb reliquary.



This statue depicts a procedurally-generated historical event.

- I **combat's gravity well**
- II soft edges
- III the game as its own fan fic
- IV a warm place

Let's talk about an example of the game exerting force on the community unexpectedly, through the influence combat has had on the game. But first, some setup.



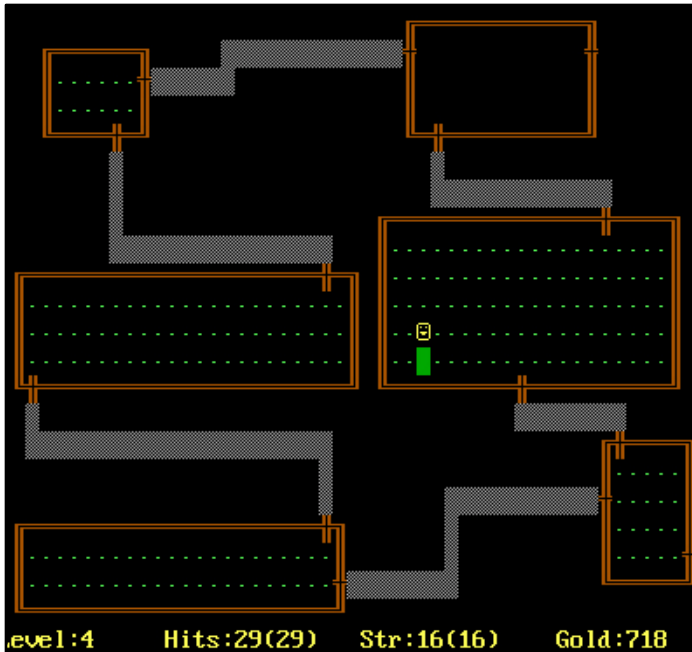
The Elder Scrolls III: Morrowind, Bethesda (2002)
Gamma World 3rd Edition, TSR (1986)
Ancient Domains of Mystery, Thomas Biskup (1994)

A decade ago, we were intuitive, amateur game designers and didn't know what we were doing. We recapitulated a lot of the design patterns of our influences.

Influences:

- 70s tabletop RPG *Gamma World*
- *Morrowind*
- *Ancient Domains of Mystery*

We fell in love with roguelikes: text “rendering”, complexity, player-monster parity. Our goal was to make a sci-fi roguelike with a weird, rich, burgeoning setting.



And so, we made what we knew, a “traditional” roguelike: turn-based, combat-heavy, tactical. Our worldbuilding was done through in-game books, descriptions on objects, and NPCs.

(img: https://commons.wikimedia.org/wiki/File:Rogue_Screen_Shot_CAR.PNG, altered)

(img: <https://www.artic.edu/artworks/8374/the-birth-and-the-first-seven-steps-of-the-buddha>)

(img: <https://pxhere.com/en/photo/1610816>)



This is the “museum gallery” approach to worldbuilding; we hang the world on the wall and tell the player, “Look, but don’t touch.”

The game’s verbs were majority combat-focused. Only a small number of them worked to scaffold this rich world we were claiming.

(img: <https://www.pxfuel.com/en/free-photo-oymxq>)



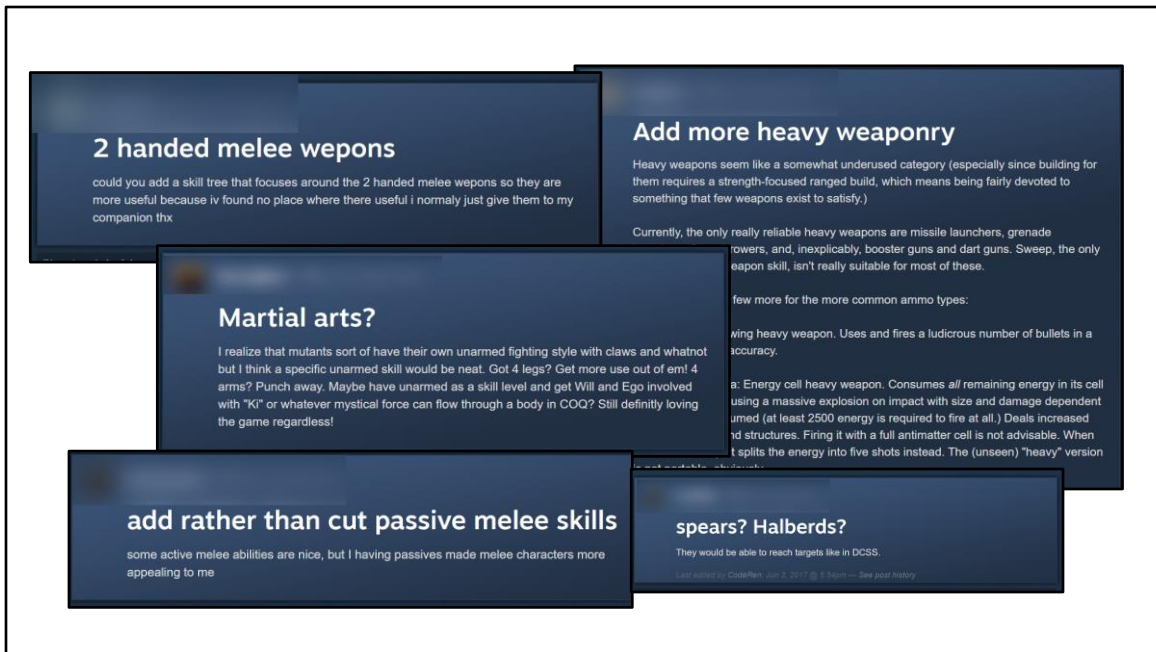
creator
ongoing project
community

How does this tie back to the three-body metaphor? What force is exerted here?
Let's talk through an example from our skill system.

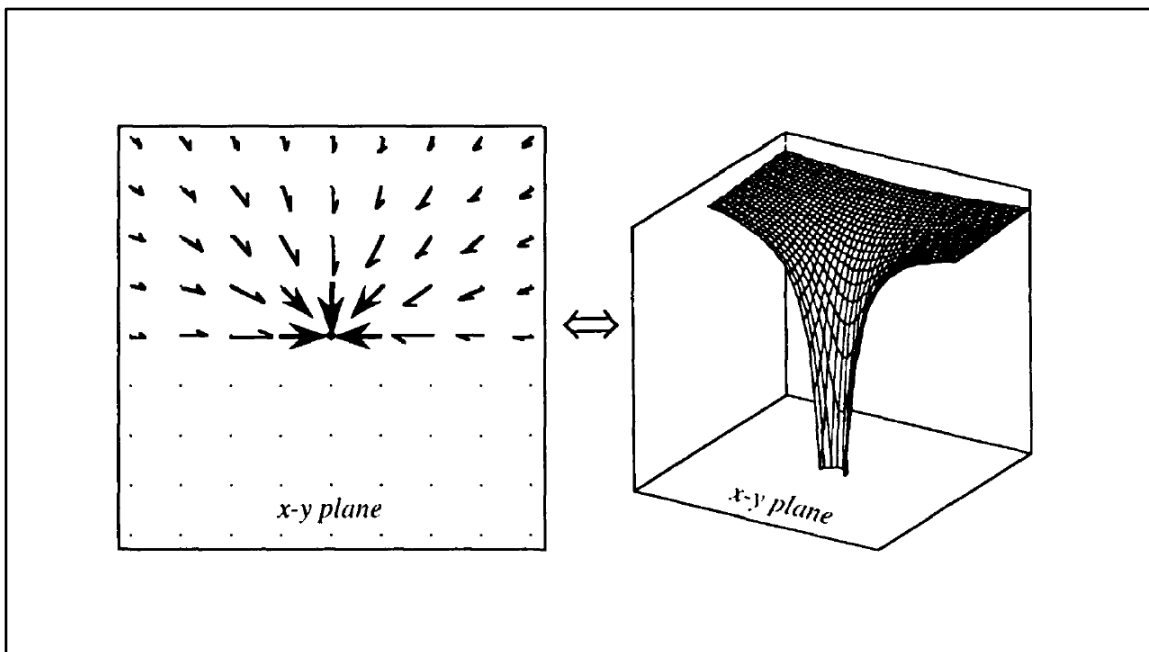
```
[ Buy Skills and Powers - 0sp remaining ]
[+] [100sp] Cooking and Gathering
[+] [100sp] Endurance
[+] Wayfaring
[+] [75sp] Acrobatics
> [-] [50sp] Axe
    - [0sp] Axe Proficiency 0 Strength
    - [150sp] Cleave 19 Strength
    - [100sp] Charging Strike 19 Strength, Cleave, Charge
    - [150sp] Dismember 21 Strength
    - [150sp] Hook and Drag 23 Strength
    - [150sp] Decapitate 25 Strength, Dismember
    - [300sp] Berserk! 29 Strength, Dismember
[+] [100sp] Bow and Rifle
[+] [50sp] Cudgel
[+] [150sp] Customs and Folklore
[+] [300sp] Dual Wield
[+] [100sp] First Aid
<More...>
Axe
You are skilled with axes.
```

We put a lot of focus on melee weapon skills because 1) as discussed, we'd created a traditional combat roguelike, and 2) we naively thought "more was better" and that we'd fill in any holes we'd created at a later date.

BUT: we were worldbuilding without knowing it. Systems articulate what it means to BE in a world. We articulated a vision of multifaceted, nuanced melee combat and little else.



In imagining what else was possible from the world, players responded in the way we unknowingly trained them to: by imagining more ways to melee fight.



Even worse, we couldn't just add non-combat skills to counterbalance, because there was such a powerful force of attraction toward combat. The game is difficult and the margins for survival are thin. Players are constantly pulled in the direction of death, and so are incentivized to spend all their resources on survival.

The core combat loop from which so much of the game is spun acts like a gravity well that compels the rest of the game to orient toward it. To fight this, we needed to embed a change deep into the DNA of the game.

(img: https://commons.wikimedia.org/wiki/File:Force_Field-Gravity_Well_Inter-relationship.png)



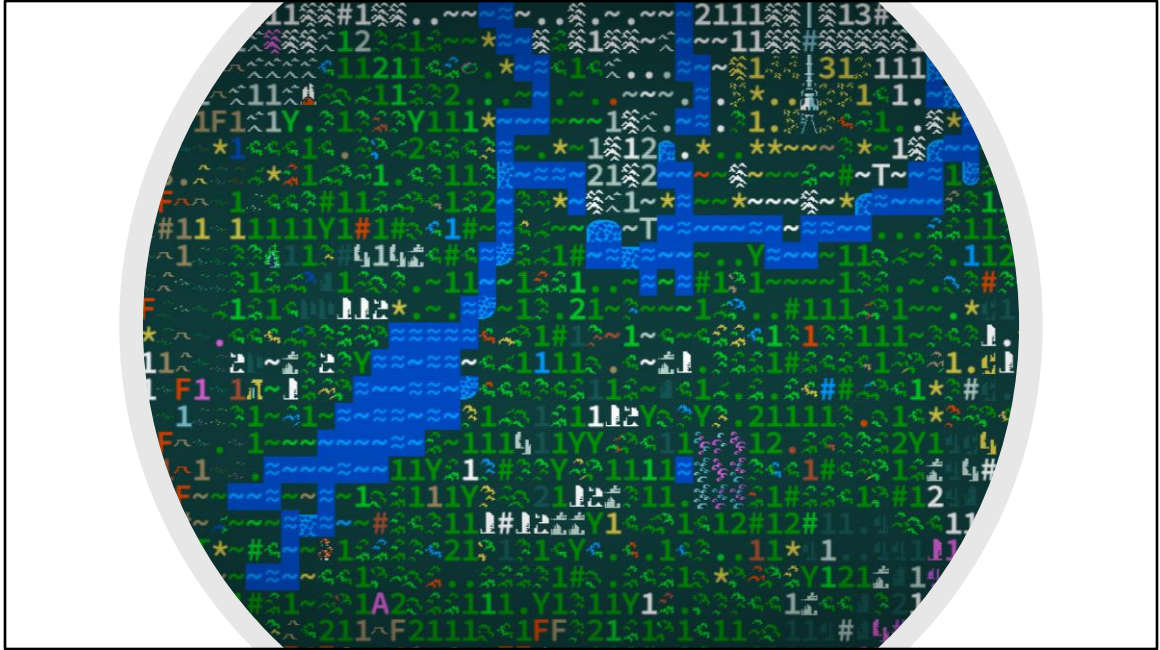
Before I share two such examples, let's talk about why combat works narratively at all. Emergent combat encounters, especially with the rich narrative context we give them, can be narratively rich events themselves.

Here's a four-way battle between quartz baboons, giant amoebae, feathered serpents, and a player character who's used a mutation called Temporal Fugue to summon copies of themselves from across spacetime. This battle, taking place in the context of the tense factional relationships of *Qud* and the lore around bizarre spacetime anomalies, produces a ripe soil for emergent narrative to flower.



Onto the examples. How do we embed non-combat interaction deep into the DNA of the game? Here's an example that's interesting for its potential to be generalized to any game built on top of a simulation.

Every time we generate a world, we end up with a catalog of in-game secrets, info that's relevant to the player but—by virtue of being generated—cannot be looked up in a wiki.



(This is a debug view of the worldmap with every encounter exposed.)

```
[ Tenahr, legendary herding dog ]  
Live and drink, water-sib.  
-----  
Your reputation with dogs is 300.  
Tenahr, legendary herding dog can award an additional 100 reputation.  
> 1) Share a secret with me, water-sister. [-50 reputation]  
   2) I have a secret to share with you. [+50 reputation]  
   3) I would ask you to join me, water-sister. [-404 reputation] [End]  
   4) Live and drink, water-sister. [end the water ritual]
```

We realized we could expose these secrets to players and turn them into a form of social currency. This works because it integrates with the combat system (secrets include the locations of weapons and other artifacts vital to survival) instead of fighting against it. And yet, it's fundamentally a non-combat interaction.


```
[ Fucyocareus Nucyogiope the Wise, village queen ]
Live and drink, water-sib.

-----
Your reputation with the villagers of Kaarrapad is 100.
Fucyocareus Nucyogiope the Wise, village queen can award an additional 100
reputation.

> 1) What a savory smell! Teach me to cook the favorite dish of Kaarrapad.
   [learn to cook Fungus-Spice Electric Matz: -50 reputation]

   2) Would you teach me your ways? [learn Berate: -225 reputation]

   3) I would ask you to join me, water-sib. [-320 reputation] [End]

   4) Live and drink, water-sib. [end the water ritual]
```

Another solution: a cooking system that provides combat benefits but encourages players toward a unique form of cultural exchange. Players are incentivized to learn about local ingredients, trade recipes with nearby villages, etc.

I	combat's gravity well
II	soft edges
III	the game as its own fan fic
IV	a warm place

Now for an example of the community exerting force on me.

I pad through wet grasses, each step pushing briny mud up through my toes. My hind legs are tense, ready to launch me into a fast gallop at a moment's notice. Night has fallen, and my keen ears pick up the movement of creatures beyond the light of my flickering torch.

This is my first time away from home, and I am frightened and lost in the saltmarshes of Qud.

My inner faundren wails for the meadows of home, the irrigated vinegardens. My inner *hartind* shouts its objections; we will make it to the oasis of Joppa or die trying.

Sadly, the rest of me may do neither: I know not where Joppa lies from here, nor home. I can do little but **wander**.

(skip) to the guide?

Quickplay as a Hindren? Use build code BLNOMMIIAABJBLBOB1

A Hindren's Guide to Qud
Caelyn Sandel (2015)

Shortly after the game was released on Steam, gamedev Caelyn Sandel started to tweet, in character, about her experiences playing the game as a hindren, a fictional species of deerfolk she'd headcanon'd from the game's character creation engine.

I was blown away by how precisely she nailed the game's voice.

She then wrote *A Hindren's Guide to Qud*, a twine fanfic and starting guide. It was about a hindren who had been expelled from her grove by Grand-doe for being *hartind*, the hindren word of two-gendered. The hindren has a tender encounter with another exile, and then the fic segues into a quick-start guide.



In 2017, we hired Caelyn and put the hindren in the game.



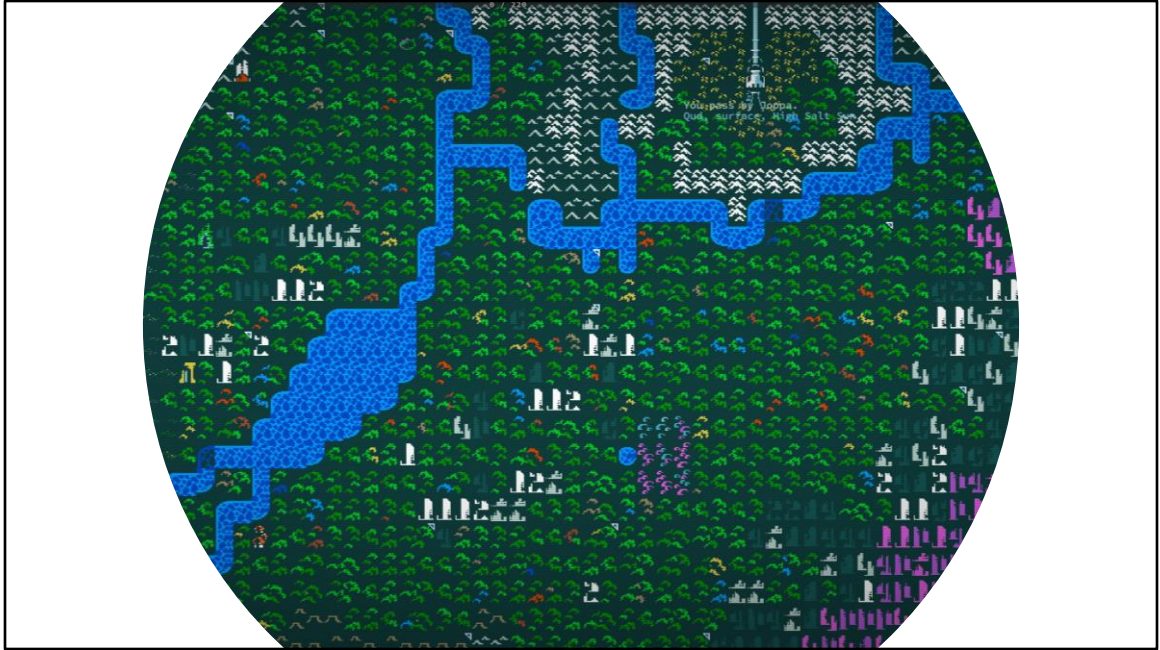
More recently Caelys has created the mopango, a species of subterranean, glowing pangolins who are modeled after the Quakers.

Caelyn found her way into the world we *had* meant to articulate with our museum gallery worldbuilding, and by feeling along its edges, she discovered new territory we *hadn't* imagined.

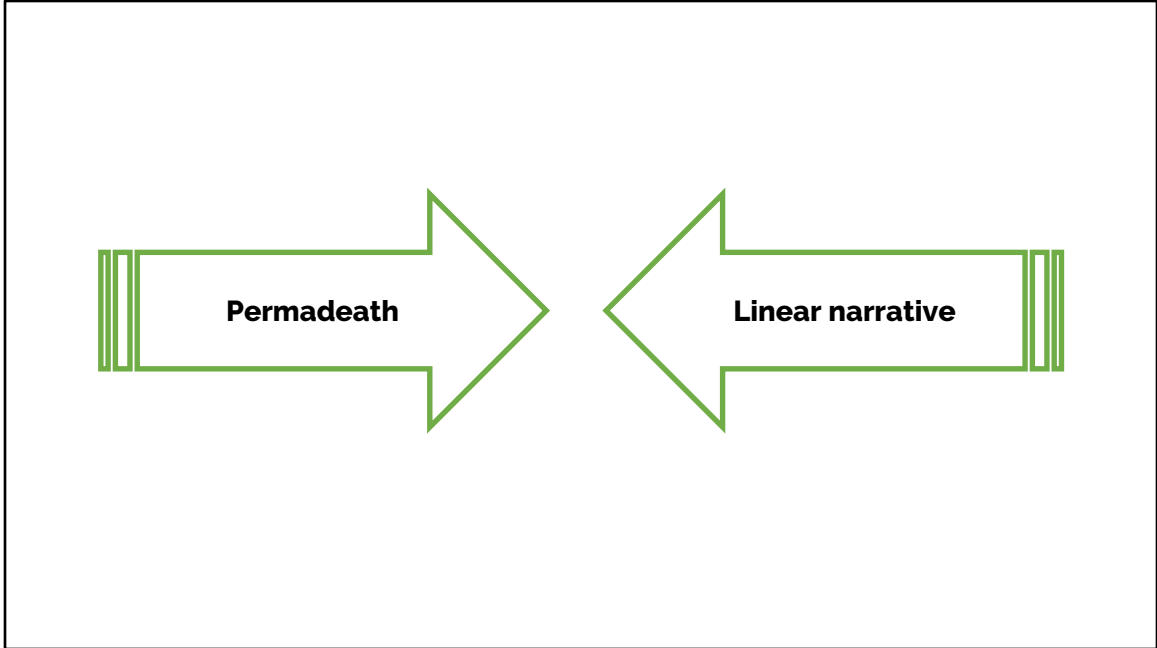
Hiring Caelyn was an instance of the community exerting force on me, the creator, which in turn exerted force back on the game once her contributions were added.

- I combat's gravity well
- II soft edges
- III the game as its own fan fic**
- IV a warm place

Let's look at another example of the game and I exerting force on each other.



A strange thing about *Qud*: the world is procedurally generated and there's permadeath, but there's also a linear narrative.

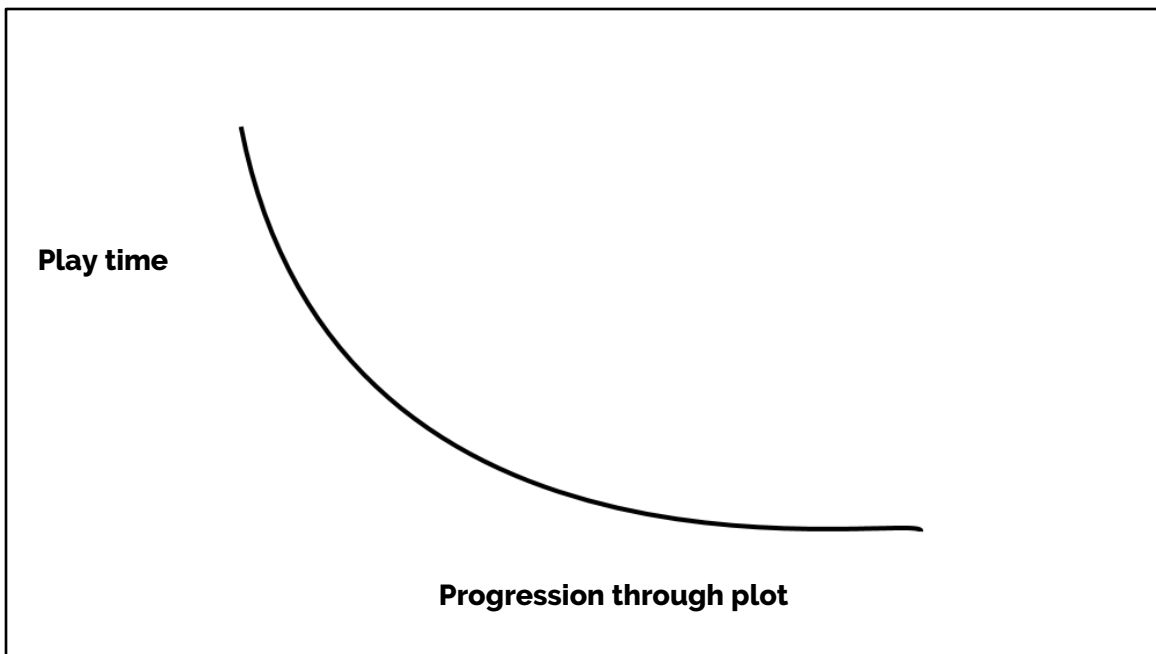


This anti-pattern creates a lot of tension by forcing players to replay early segments of the narrative over and over again. What can we do to fix it?

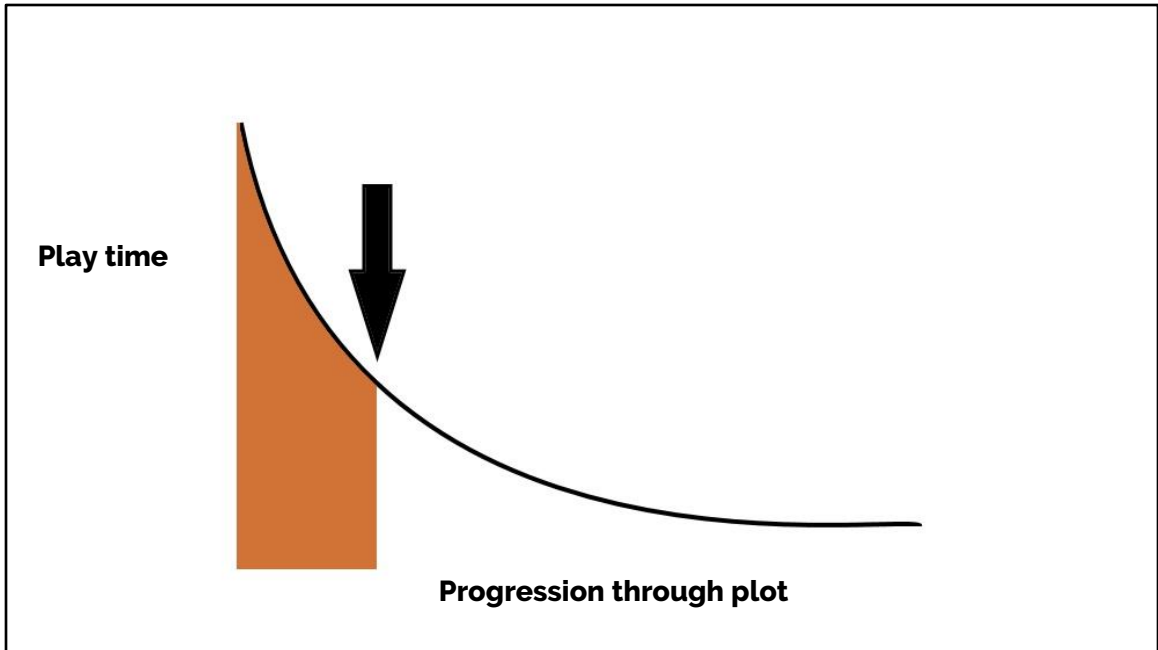
Just add save and load?

Should we just add save/load and convert the game to an RPG?

- If so, then we compromise some of the mutually reinforcing mechanics that make roguelike, and *Caves of Qud* in particular, sing: challenge, horizontal exploration, exploring new character archetypes, etc.
- But: many people already play the game this way! Save/load is a debug option that we're adding official support for soon. Ultimately, though, we want to serve both audiences. So we need to find ways to mitigate the pain of the permadeath -><- linear narrative anti-pattern.



Observation: with permadeath, the majority of your playtime is spent in the early game, doing the same early plot segments over and over again.

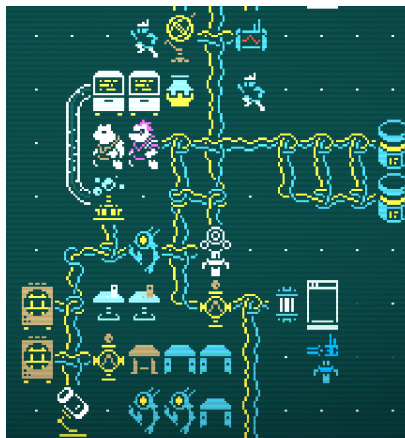


We hacked this by giving you the option for a procedurally generated start that hooks back into the trunk of the main quest a little later, after the most repetitive segments would be completed.



Even though this hack mitigates the repetition, players would still be seeing the same static quest locations and speaking to the same quest NPCs.

BUT: we observed that, despite the repetition, players really attached to these static characters, bonded over them, shipped them, etc.



So, taking a page from Caelyn's aesthetic, we made these static locations with static NPCs especially cozy. They're places to come home to after a foray into the procedural wild. They function as familiar touchstones in an enigmatic and often impenetrable world.

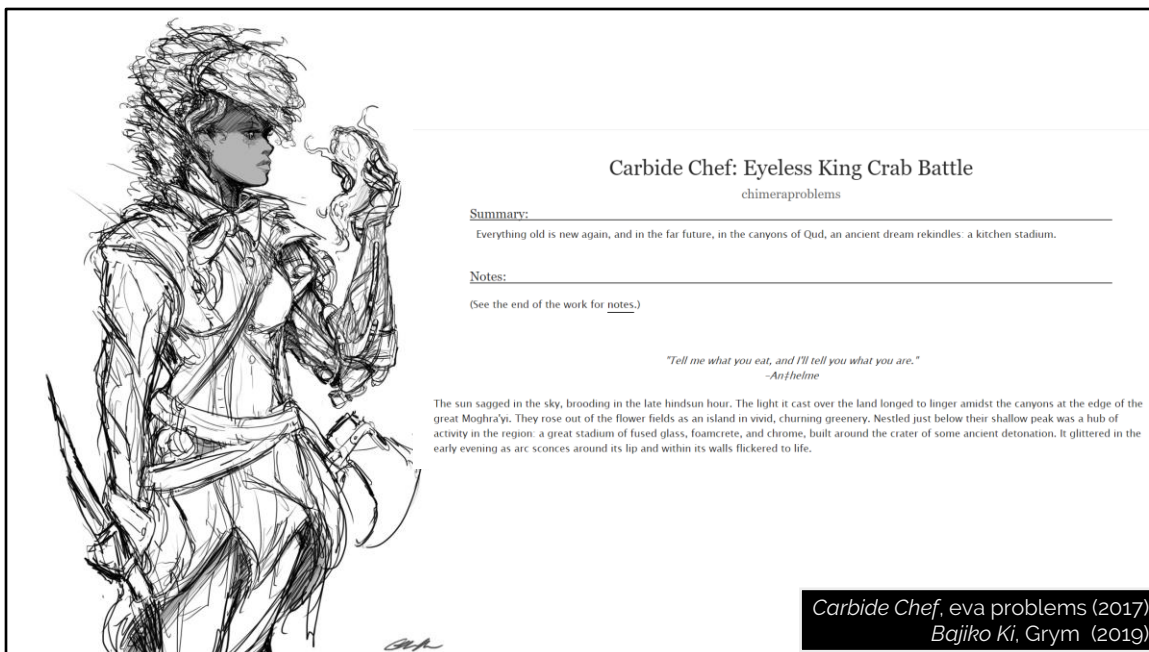


Beyond that, they provide an opportunity to remix the contexts that players see and interact with these characters in.

In this way, playthroughs function like fan fiction of the main narrative, allowing for explorations of character dimensionality beyond what's in the literal "text" of the main quest.

- I combat's gravity well
- II soft edges
- III the game as its own fan fic
- IV a warm place**

Finally, let's look at another example of the game exerting force on the community, and the community exerting force back on me.



This is *Carbide Chef*, a 4-part fanfic by gamedev and writer eva problems that imagines what Iron Chef looks like in the *Qud* universe. It's fantastic, steeped in *Qud* lore and featuring many memorable characters. Almost 50,000 words across its four parts!

(This is *Bajiko Ki* by Grym, a member of our Discord. It's a fanfic illustration of a character from eva's fanfic.)

Radical Bodily Autonomy [\[edit\]](#) [\[edit source\]](#)

There's a fable about a mimic who seeks to belong but never does, whose ambition ultimately leads to a grisly fate. Its moral serves an ideological function: to keep us from belonging where we already do. So let me say to you now: belong, friend. We wait for you joyously.

— Q Girl, *Disquisition on the Malady of the Mimic*

As a character's power grows, so does their ability to alter the shape and functionality of their body. Mutated Humans can start with a wide variety of mutant abilities and features, from an extra pair of legs to the power to tear open the fabric of space-time. Mutation Points gained every level can be spent to strengthen existing mutations or saved up to buy a new random mutation. True Kin can start with cybernetic implants, such as carbide hand bones to strengthen their punches or night-vision implants to better see the innumerable threats down in the caves of Qud. Cybernetics Credit Wedges and Becoming Nooks found during exploration allow them to install more and greater implants for countless esoteric purposes and occasions. Given luck and patience, a successful high-level character can be almost completely unrecognizable from the humble figure who once set out from their starting village.

Eva is a trans woman and has told me that one of the things that attracted her to *Caves of Qud* was its radical bodily autonomy, a theme that we as the creators lacked the lived experience to fully articulate and contextualize. This serves as another example of the community inhabiting the thematic space we articulated, feeling along its edges, and discovering new territory.

lush wet ivy melinda 🍷 06/22/2018

Caves of Qud is a game about the future and its possibilities. We all gather under the shade of this and seek to draw from the common wellspring we find here. We're a thriving, vibrant group with great potential if we work alongside each other and help one another in harmony.

In the interest of encouraging harmony, we stress the safety and security of those who gather here. Conflicts will arise over time, and we determine collectively how we address them, how they shape and temper our community.

We want to foster strong community bonds, and to do so we must discourage behaviors that threaten the healthy functioning of this space and erode the well-being of those within it. Accordingly, we have no tolerance for hate speech or for symbols associated with hate groups. These include 'kek', swastikas, Pepe the Frog, 4chan-isms, and all other symbols and memes that promote bigotry, fascism, and apologia thereof. Last but not least, respect our users' existence, pronouns, identity, and lived experience. (edited)

I've spoken to several players from marginalized communities who've told me they've stuck with the game because of our inclusive Discord, managed by Ivy Melinda and our fantastic moderation team. Here's an excerpt from our explicitly leftist, antifascist code of conduct.



creator
ongoing project
community

The community and its diverse base exerts force on me as a creator, opening my eyes to their experiences and how they're represented (or not represented) in game. This has led to wider representation in the game (thanks in large part to Caelyn Sandel): a deaf character, characters with assistive mobility devices, and explicitly queer characters.

Chaos, another contributor, added a robust gender and pronoun system and developed a game mod that lets player characters hook into it.

Being locked in orbit with the game and its community has caused me to grow as a creator and a person, and I'm thankful for it.



Thanks!