GDC SUMMER

# Until You Fall: Building Satisfying VR Combat on a Budget (Part 2)

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# Who Are We?

Dave Bennett

SCHELL GAMES

Patrick Jalbert

UNTIL YOU FALL

- ❖ We actually recorded a talk about Until You Fall earlier this year!
  - ➢ 5 High Level Takeaways we thought would be useful for VR development
- ❖ Director’s Cut
  - ➢ For Part 2, we’ll talk through 6 more specific takeaways
  - ➢ A bit more technical
  - ➢ Some stuff specific to VR Action games
  - ➢ Disclaimer: These are like, our opinions, man

GDC

Until You Fall: Building Satisfying VR Combat on a Budget

# UNTIL YOU FALL

- Melee Combat Action Game
- Rogue-Lite Elements
- You are a Badass Glowing Knight
- Weird Blend of Neon and Fantasy with a Synthwave Soundtrack
- Rhythm-Lite Combat/Gameplay
  - Choreographed Attacks and Blocks

# Our Five Big Takeaways

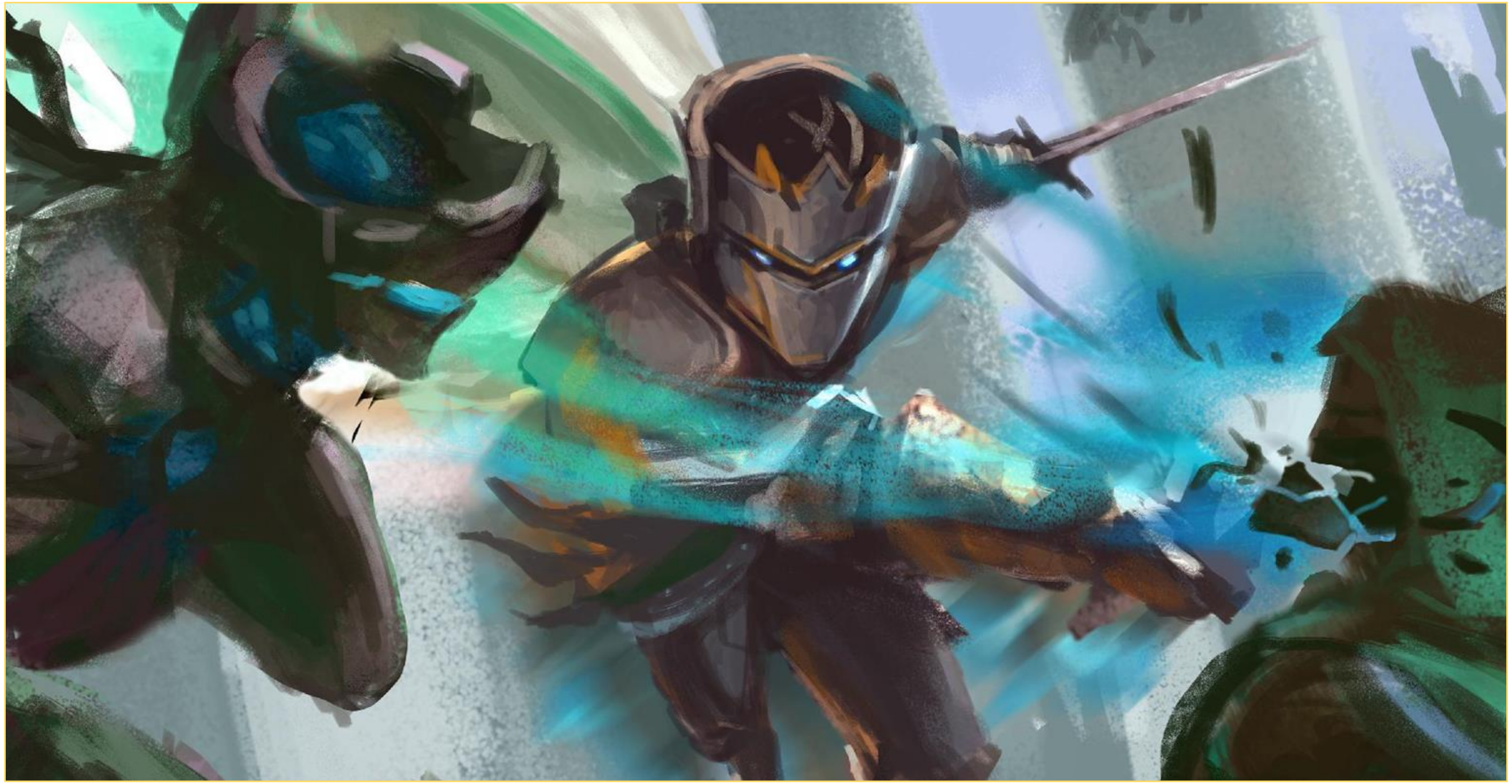
(From Part 1 of the Talk)

- ❖ It's Okay to Reference Non-VR Games
- ❖ Be Wary of Secondary VR Interactions
- ❖ Know your Player Fantasy
- ❖ Set the Rules of Your Virtual Reality
- ❖ Incentivize the Fantasy

# Six Random, Specific Topics

(Take ‘em or leave ‘em)

- ❖ Spatial Anchoring & Movement Schemes
- ❖ Item Heft
- ❖ The True Scope of Reward Moments
- ❖ Swing Detection
- ❖ Making Stats Grokkable
- ❖ Player Avatar

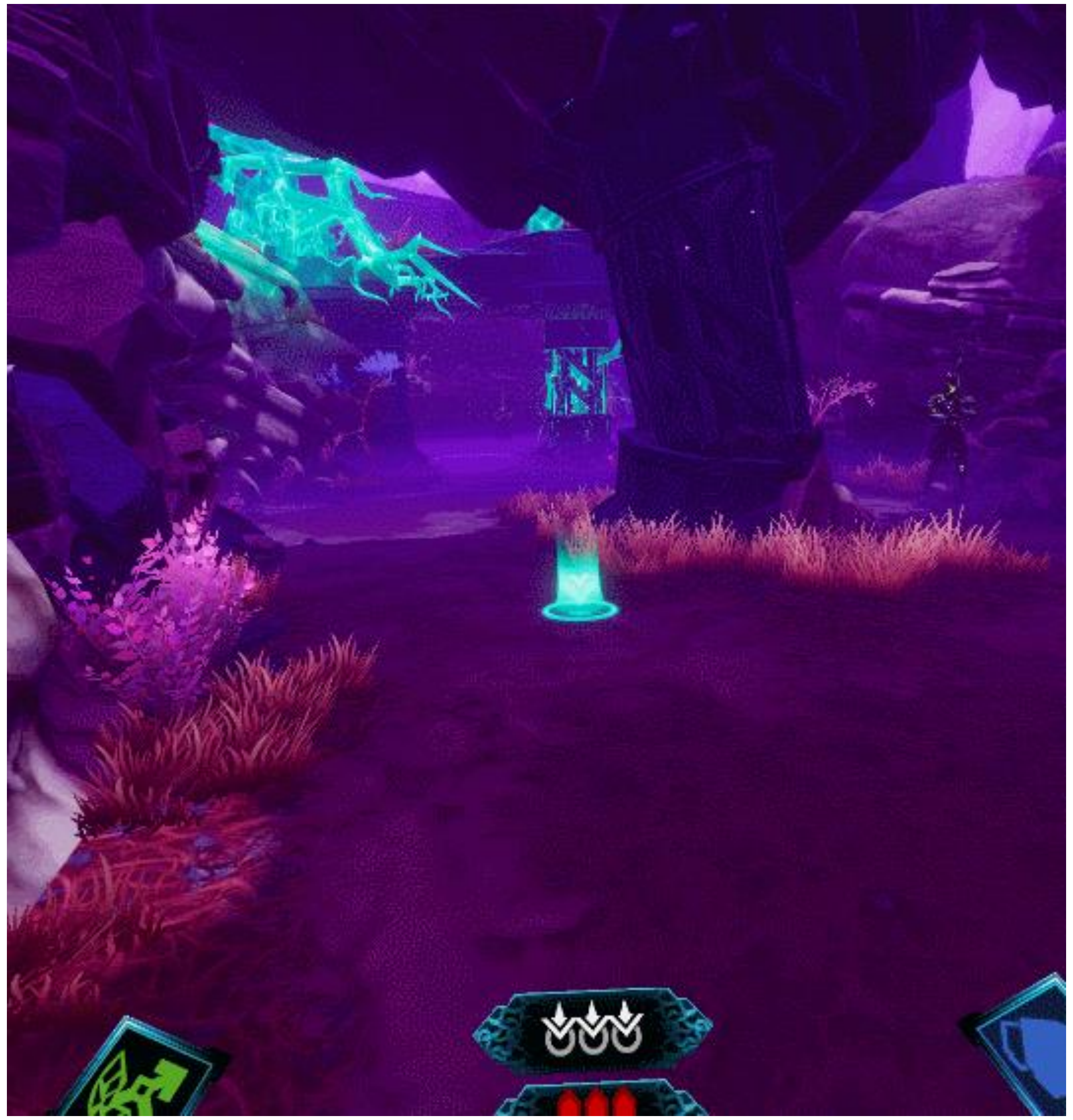


# Topic #1
# Vignetting & Movement Schemes

Guys, Vignetting is really great

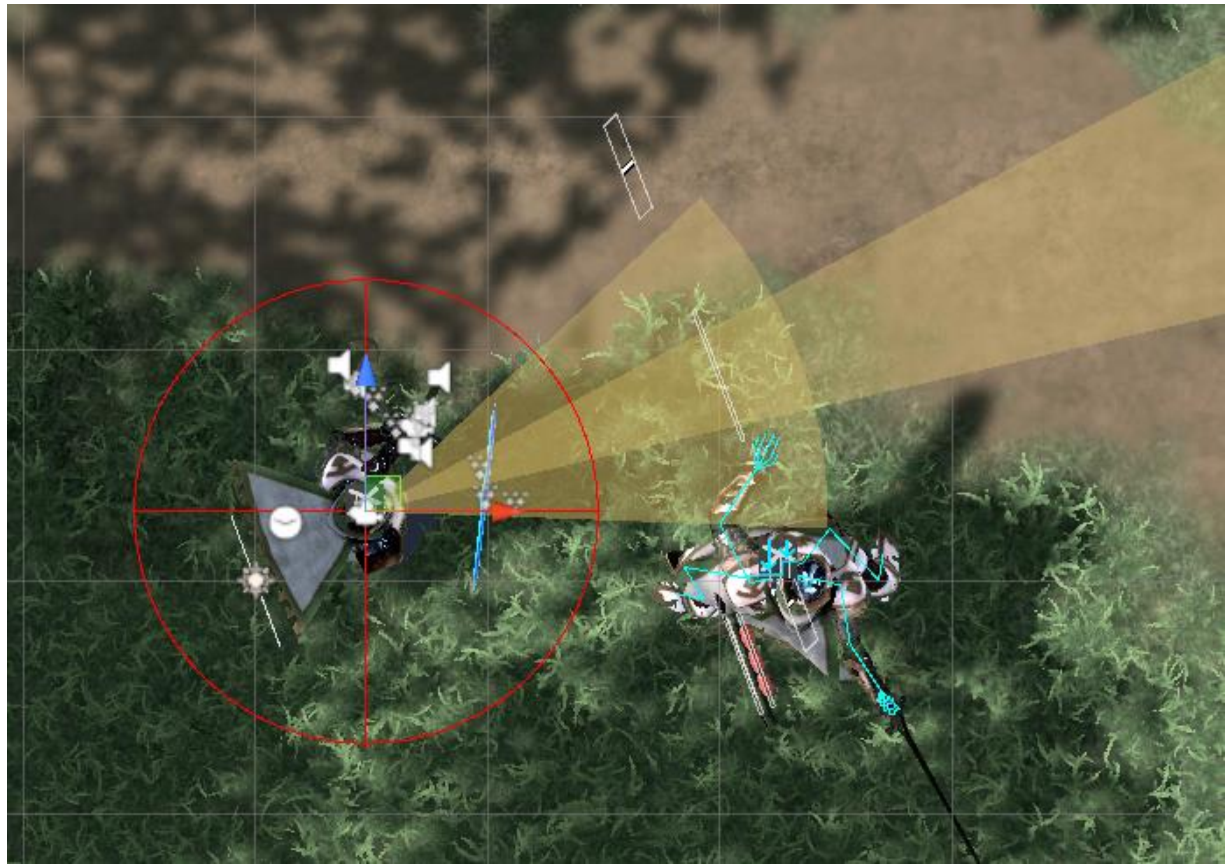
# VR Comfort & Spatial Anchoring

- We tried *a lot* of different control schemes to address VR comfort
  - Lean-based
  - Stick Movement
  - Gestures
  - “Skiing Goblin”
- Knew we couldn’t afford to support them all
- Each one had big gameplay implications
- No one mode was comfortable for everyone
- **Spatial Anchoring + Vignetting** saved us
  - Based on Oculus papers
  - Horizon line & grid > Solid Color vignetting
- Definitely recommend using some kind of spatial anchoring



# Movement as a Mechanic

- We wanted everyone to be playing the same game
- We took our two favorite movement schemes and unified them into one
  - Stick Movement ⇒ Walking
    - Small adjustments, careful footwork
    - Kept players in combat
  - Teleport ⇒ Dashing
    - Engage & Disengage
    - Shoulder Check, is metered
- Giving each movement type a strategic niche made them feel unified
- Eventually players would master both
- Favoring one type of movement over another is now a question of playstyle instead of comfort (usually)



# Topic #2
# Item Heft

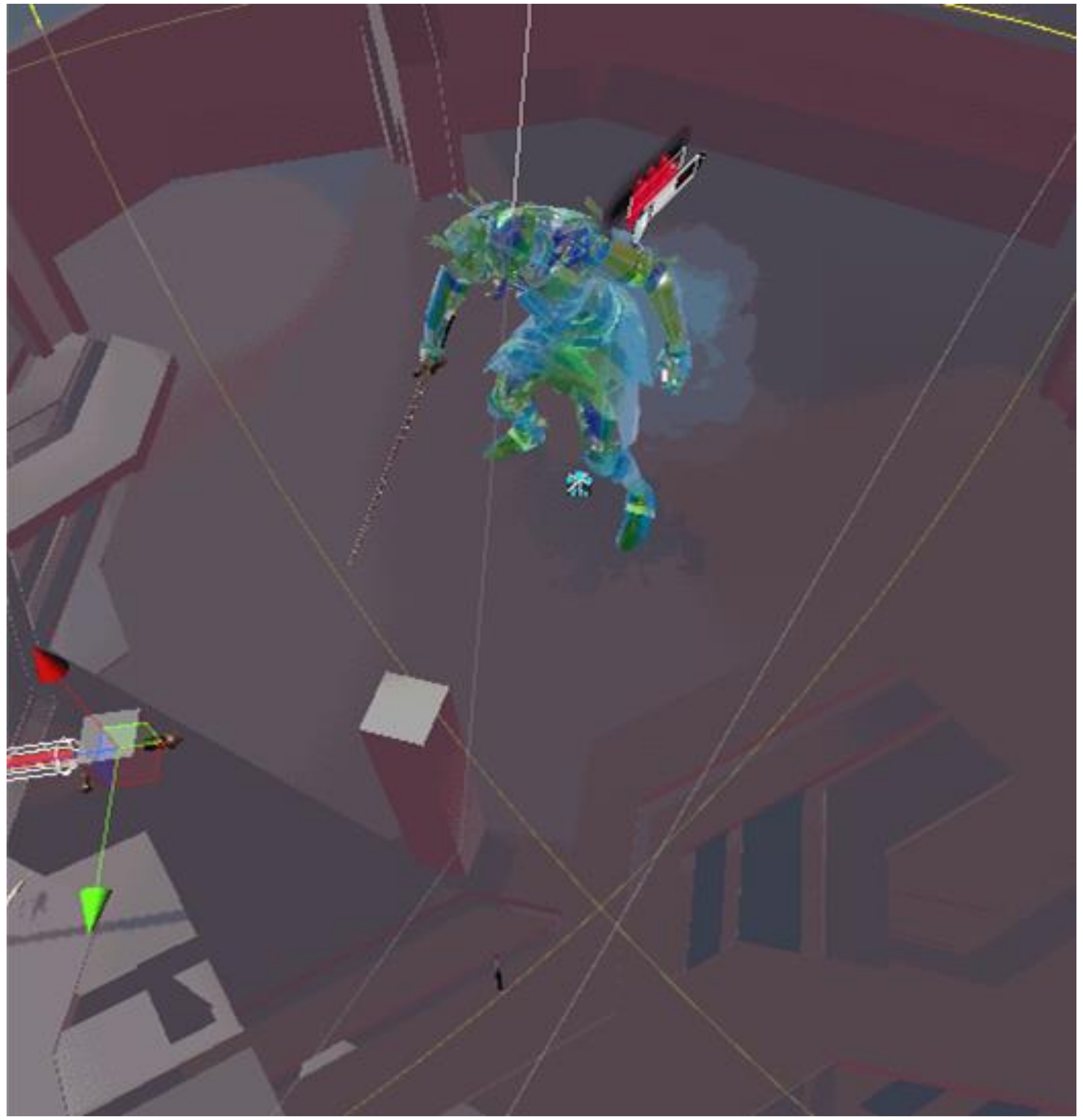
Heavy-Handed solutions

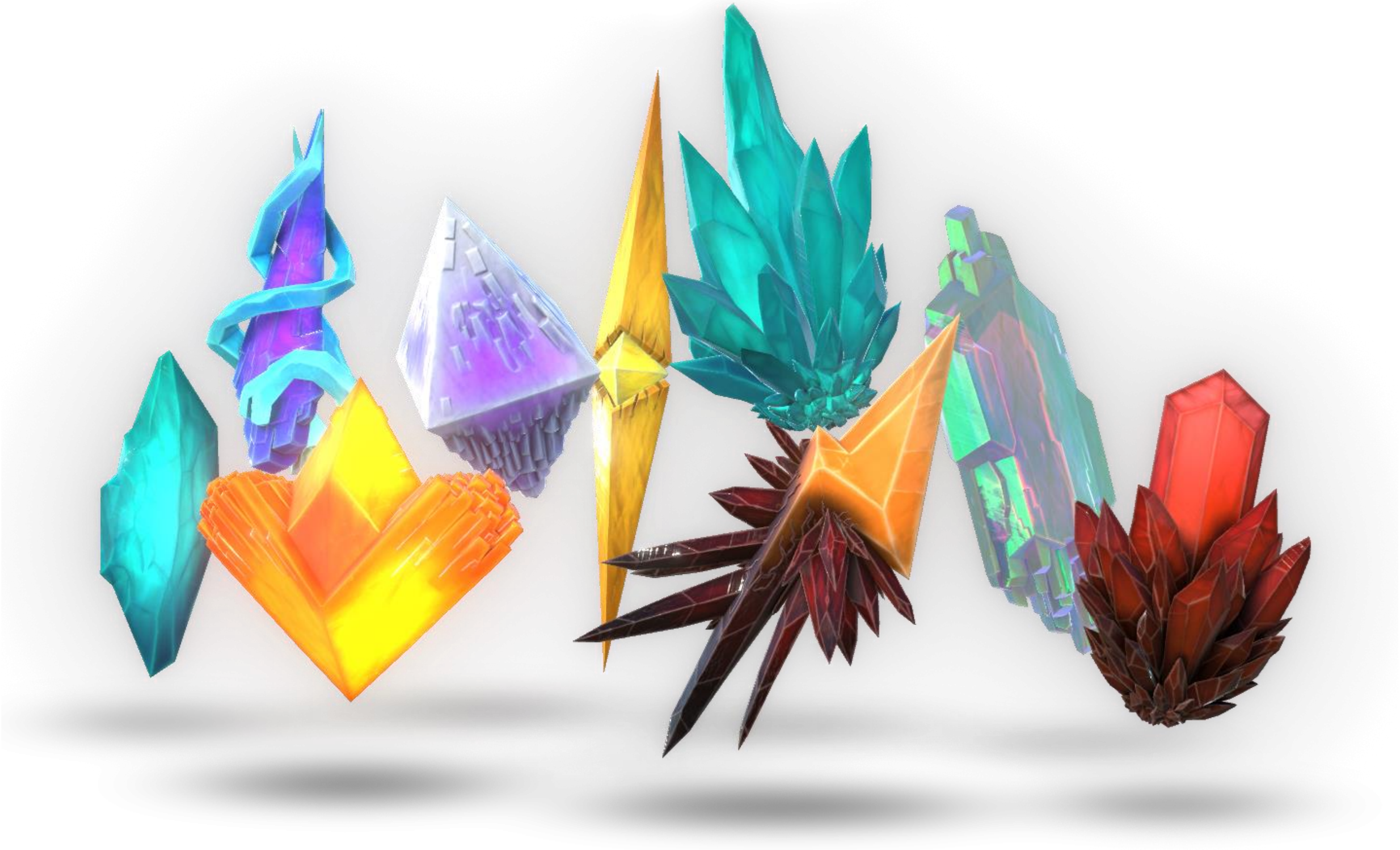
# Heaviness in VR

- Springs to simulate weight in VR feels really cool!
- Can also be divisive
- Drag can make your swings feel slow and floaty
- Wanted our heavier weapons to feel deliberate and powerful, not unwieldy
- Looking at how non-VR action games interpret weight in animations gave us our tone target
- Weight != Slow swings
- Weight == DELAY on the feedback

# Weapon Heft in Until You Fall

- ❖ How Until You Fall handles heft
  - ➢ Separate states: **swinging** vs. **not swinging**
  - ➢ The beginning of a swing creates distance between weapon and controller
  - ➢ Weapons have to "Catch up" to the swing at different rates
  - ➢ This creates the 'snap'
- ❖ All weapons in UYF use this
- ❖ A little bit goes a long way
  - ➢ Non-swinging state communicates weight more than the swinging state
- ❖ Any kind of item weight pays off





# Topic #3
# The True Scope of Reward Moments

Loot takes longer than you'd think

# The Cost of Celebration

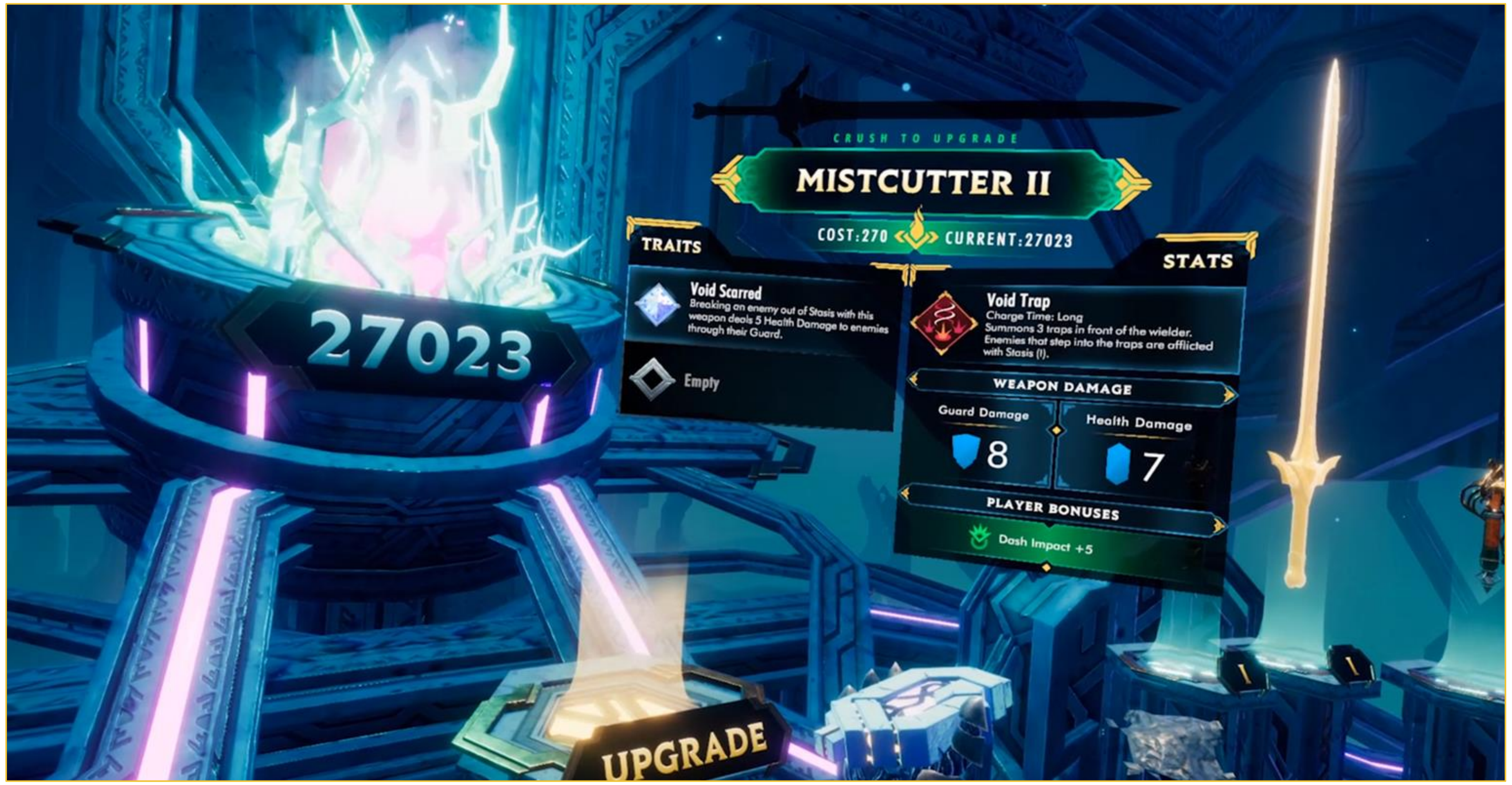
- This was one of the most expensive features in our game
- We underestimated all the ways this could go wrong
  - Context (What is this?)
  - Interaction (How do we open it?)
  - Range issues (Where is the player?)
  - Show issues (Making it read)
  - Feedback issues (Making it Satisfying)
- Ended up needing to spend about the same amount of time on the Aether Blooms as we would have for a new enemy character
- Recommend Budgeting this way gives you room to add a lot of juice if things go well

# Topic #4
# Swing Detection

“Wider swings deal more damage” - *Agatha*

# Tips for Good Swing Detection

- Issues we were trying to solve
  - Waggling
  - Players feeling like they need to swing too hard
- What we found worked for us:
  - **Low velocity threshold**
  - Legality: Time Based
    - How long has controller been above velocity threshold?
  - Quality: Distance Based
    - How far has the controller moved since we passed threshold?
- Players will swing at wildly different speeds at first
- Over time, players will gravitate towards smallest effective action
- If players regularly swing too hard - it’s a sign damage feedback isn’t clear enough
- Discrete States are better than scaling damage



Breaking an enemy out of Stasis with this weapon deals 5 Health Damage to enemies through their Guard.

Charge Time: Long

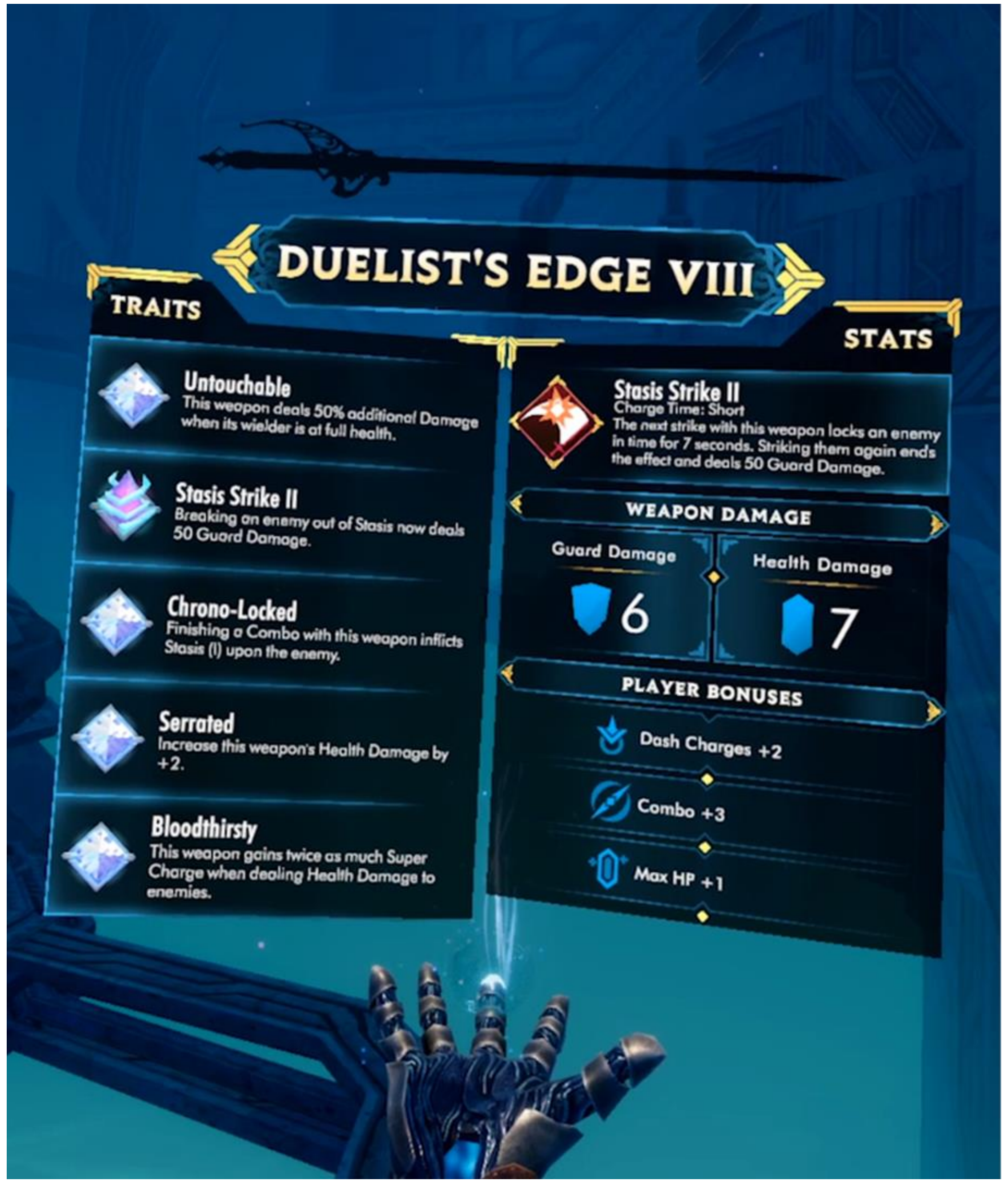
Summons 3 traps in front of the wielder. Enemies that step into the traps are afflicted with Stasis (!).

# Topic #5
# Making Stats Grokkable

Text is really hard to read in VR

# Perils of Parsability

- Wanted Until You Fall to have mechanical depth
  - Our weapons are our characters
  - Choosing Weapons / Upgrades is what keeps the loop fresh
  - Needed to give players enough information to make interesting choices
- Constant battle to keep cognitive load down
- Making “Simple UI” isn’t Simple (Especially in VR)
- Recommend building a generic UI solution early (we didn’t)
  - Iterated a lot on what information was important to show (and when)
  - Made it harder to playtest which stats were most important to show



DUELIST'S EDGE VIII

TRAITS

**Untouchable**
This weapon deals 50% additional Damage when its wielder is at full health.

**Stasis Strike II**
Breaking an enemy out of Stasis now deals 50 Guard Damage.

**Chrono-Locked**
Finishing a Combo with this weapon inflicts Stasis (I) upon the enemy.

**Serrated**
Increase this weapon's Health Damage by +2.

**Bloodthirsty**
This weapon gains twice as much Super Charge when dealing Health Damage to enemies.

STATS

**Stasis Strike II**
Charge Time: Short
The next strike with this weapon locks an enemy in time for 7 seconds. Striking them again ends the effect and deals 50 Guard Damage.

WEAPON DAMAGE

Guard Damage 6

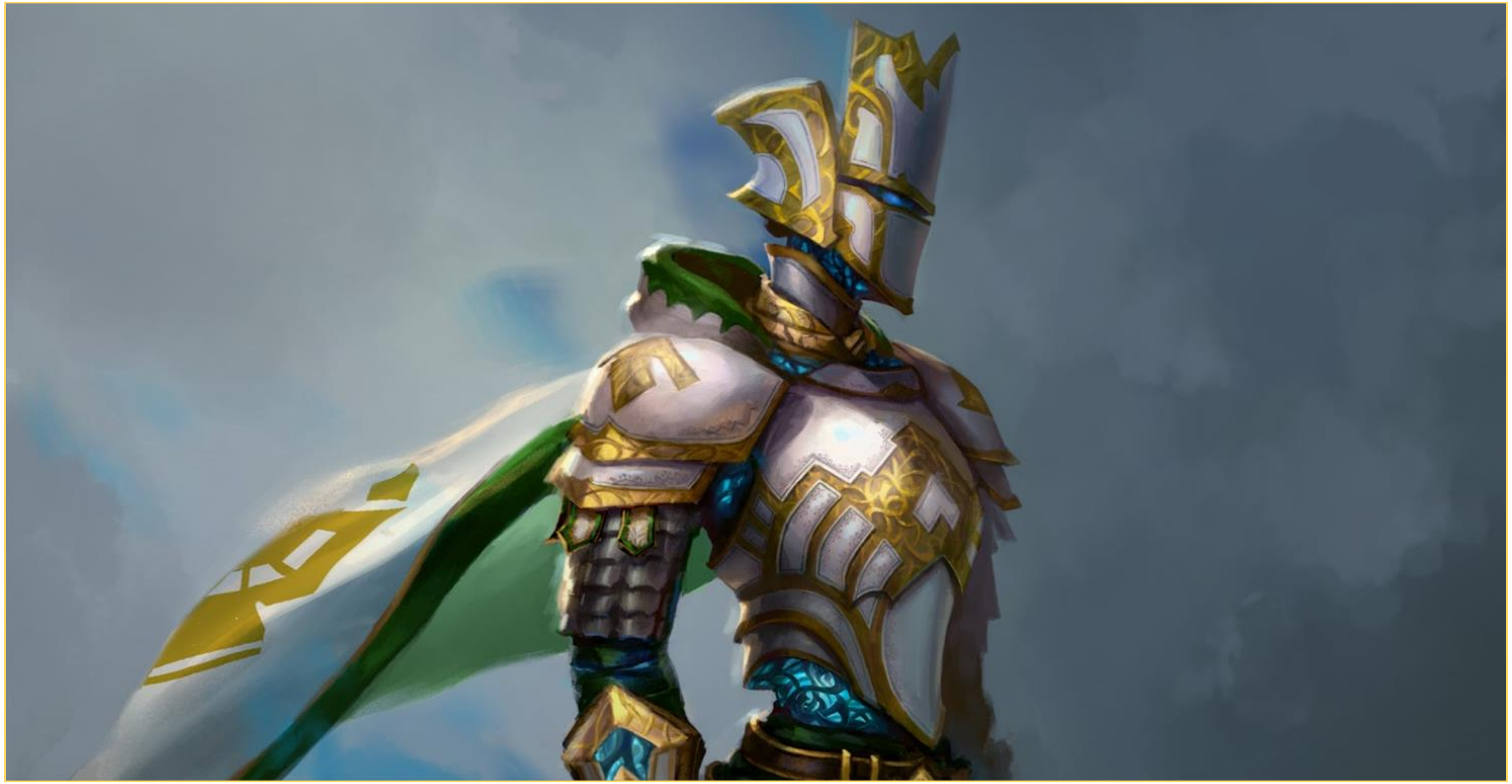
Health Damage 7

PLAYER BONUSES

Dash Charges +2

Combo +3

Max HP +1

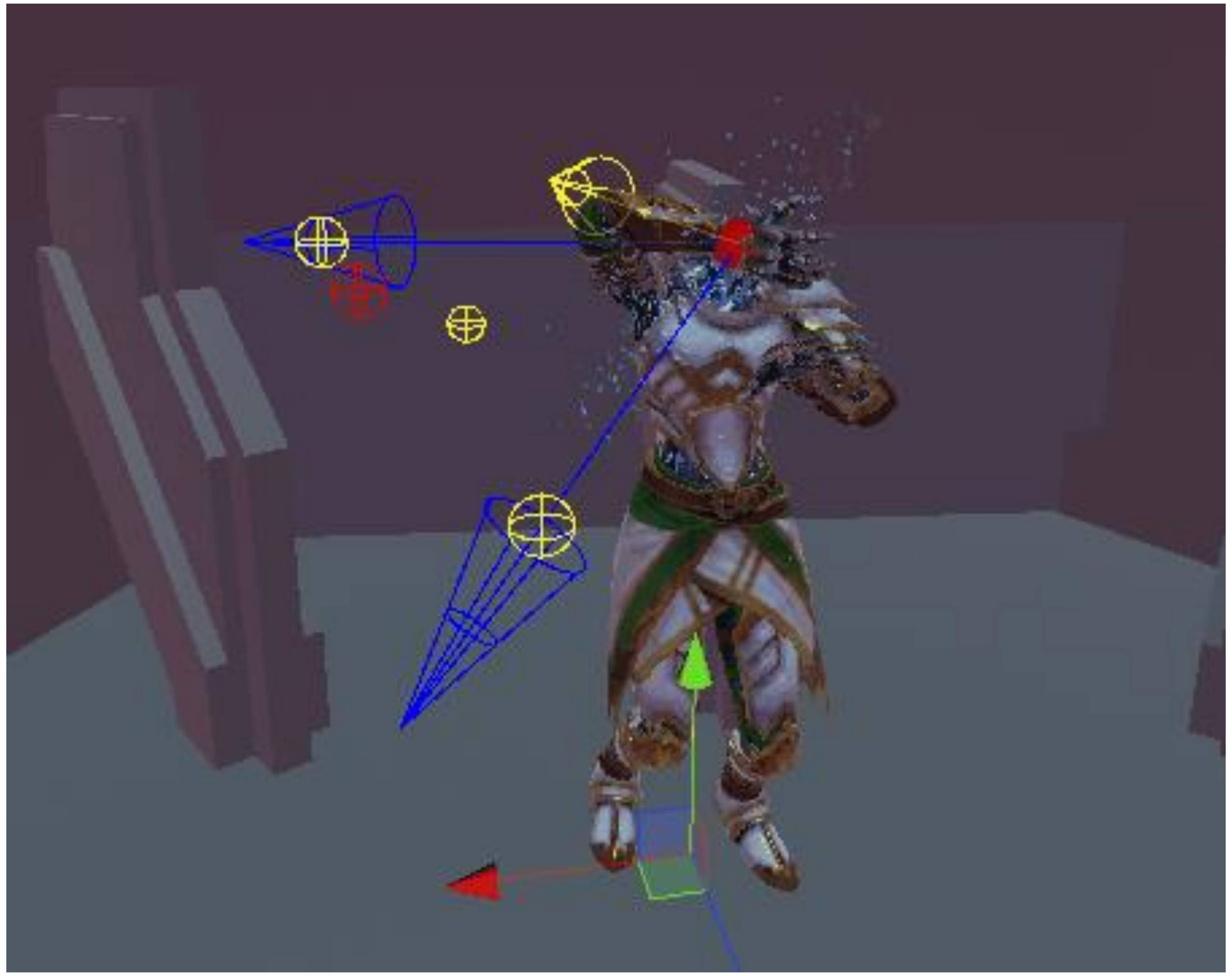


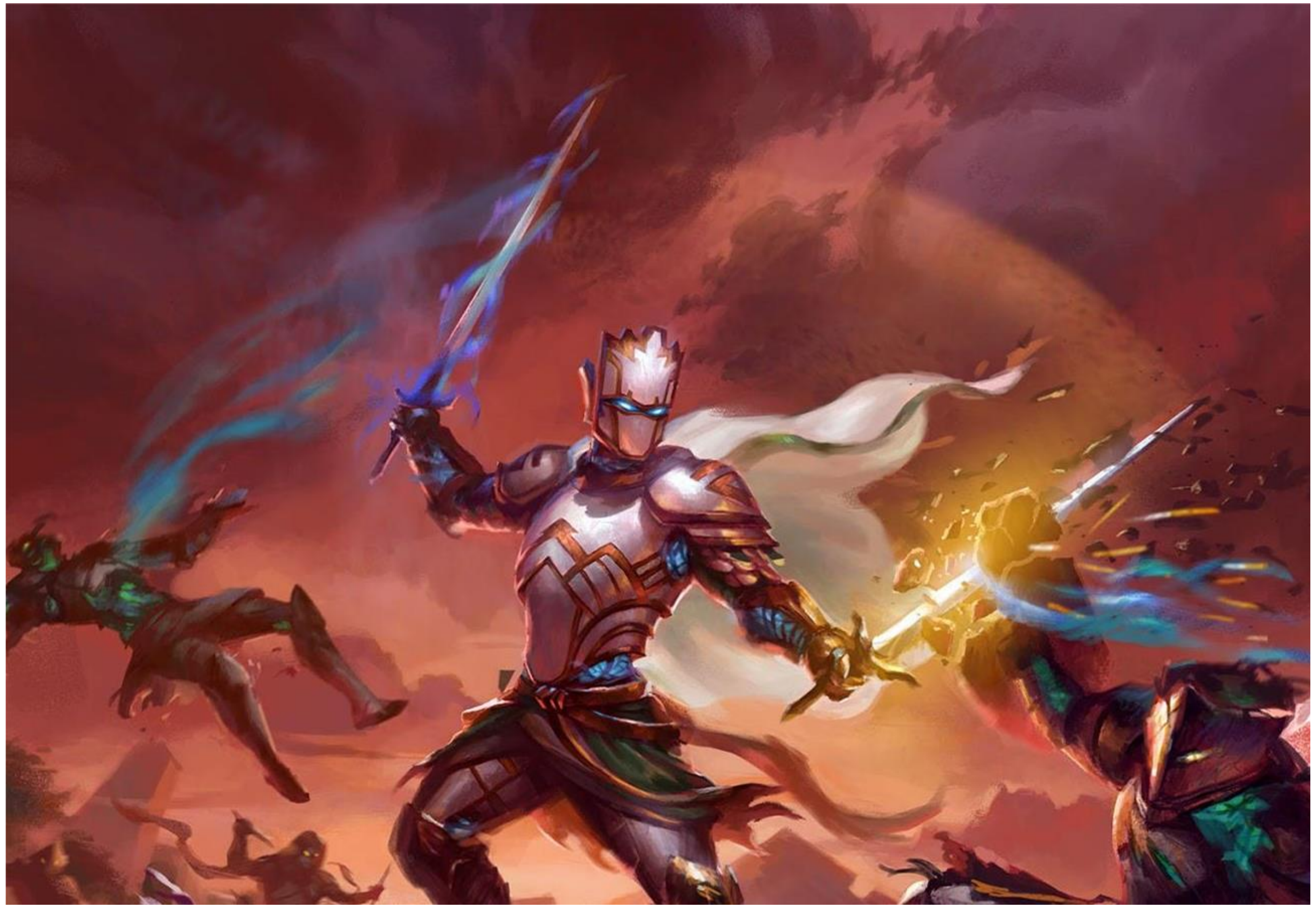
# Topic #6
# Player Avatar

No head, no back, no problem

# Elbow Room

- Our Avatar was always close to being cut
  - Needed Arms to help sell Weapon Heft
- Until You Fall’s Avatar
  - FinalIK is awesome
  - Built our own system to drive elbows, knees, and stance
- Intuit pose based off of context!
  - Knew how close player was to enemies
  - Let us make assumptions about player stance
  - Built an elbow map based off of hand position and angle
- Some ways we saved scope:
  - No mirrors!
  - Standardize player height
    - ALL players are 6’2”
    - Saved us a ton of headaches
    - Standardized Reach & Engagement Ranges





# Wrapping Up

It's almost over (again)

# To Conclude!

## Our totally opinionated recommendations

- Use a single movement scheme (If you can)
  - Vignetting + Spatial Anchoring is pretty great
- Item Heft is worth it
- Be mindful of cognitive overload when designing gameplay loops
  - Separating interactions & when they occur helps
- Discrete Damage states are easier to process
- Generic UI Solutions save time
- Identify what you Avatar is meant to accomplish
  - Use that to cut scope

# Thanks for Listening!

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