

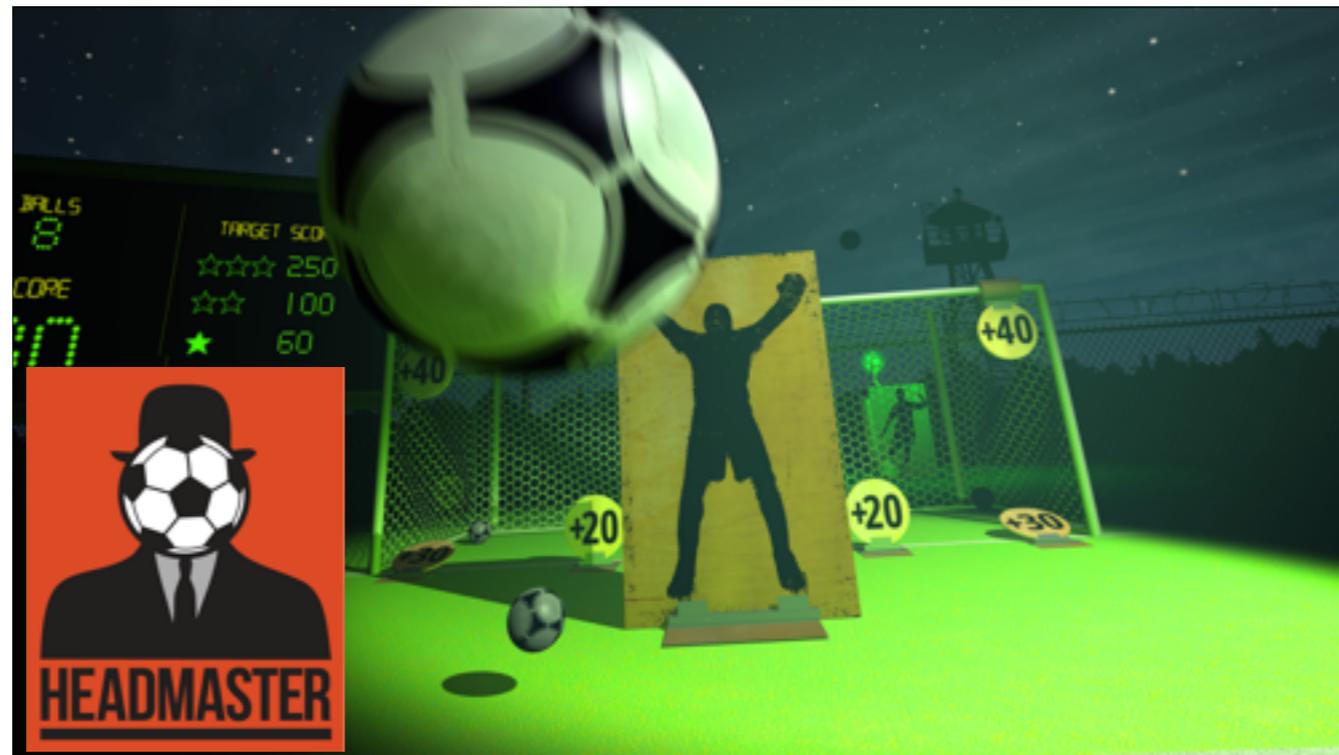


Hi - My name is Ben Throop.

I'm the founder of indie studio Frame Interactive, currently working on the VR title Headmaster.

Headmaster introduces a new VR-only mechanic of heading virtual soccer balls with your actual head, like you see Chet from Valve doing there. He's playing the prototype that I did at a game jam in 2014.

While the mechanic is fun, the immersive environment that surrounds it is what makes the title stand out. So today, I'm going to talk about four principles that we've used to build immersion in this game.



When we onboard people for a demo, we say “You are a professional soccer player who had a bad season, so your club sent you to the Football Improvement Center, which is not a prison.”

Wrapping this odd setting around the mechanic has worked out. Last year after GDC, Headmaster was signed by Sony as a Playstation VR exclusive and it has shown at E3, PAX, and PSX. Here at GDC we'll have a brand new build in Sony's Playstation VR area.

So here's a quick intro to the game...



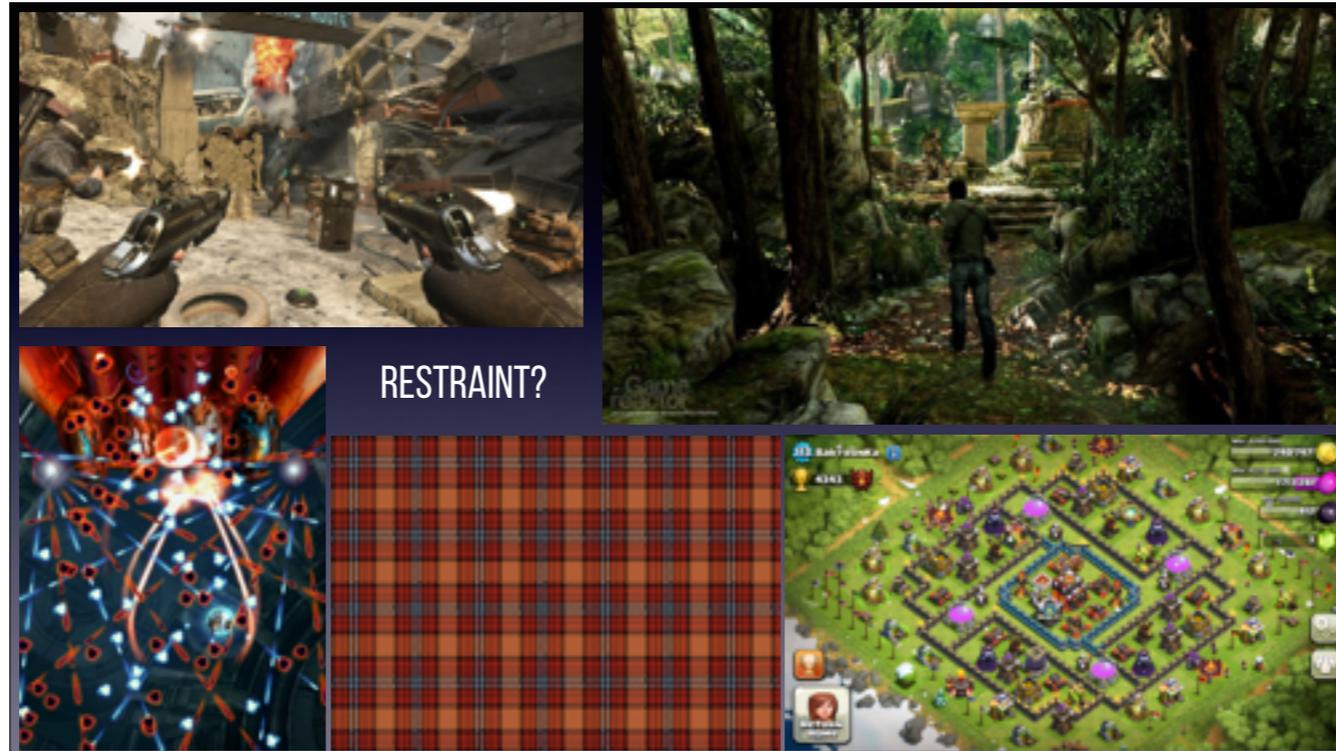
FOUR PRINCIPLES

- RESTRAINT
- PHYSICALITY
- PLAUSIBILITY
- ISOLATION

So in the process of building this game, we've honed in on these development principles that strengthen immersion for the player. We check in on these items as we build features in Headmaster, but they are principles that could be valuable for any small team looking to make a convincing gameplay space in VR while controlling scope.

So I'll step through each one and talk about some details and share examples.

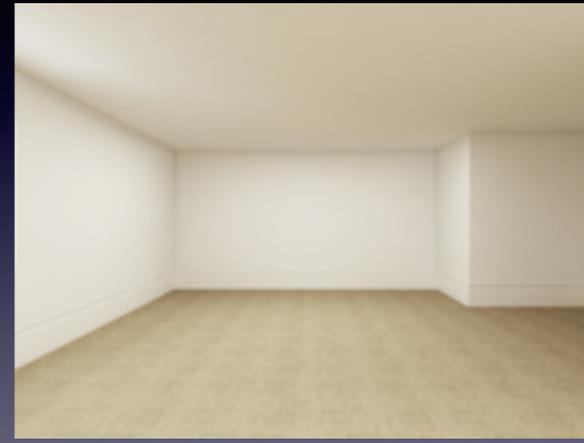
First I want to talk about restraint, starting in a broader context.



This is how video games feel to me sometimes.

I get it and know how this all came to be. Genres have formed and players are sophisticated. We're building on a lot of experience and history - so it's not surprising that games look and feel complex. But not only are do I want restraint and minimalism in my work, this kind of stuff just won't fly in VR right now. We need to figure out what works, and we need to reduce scope while we do it. We need a different model that gives us permission to do less.

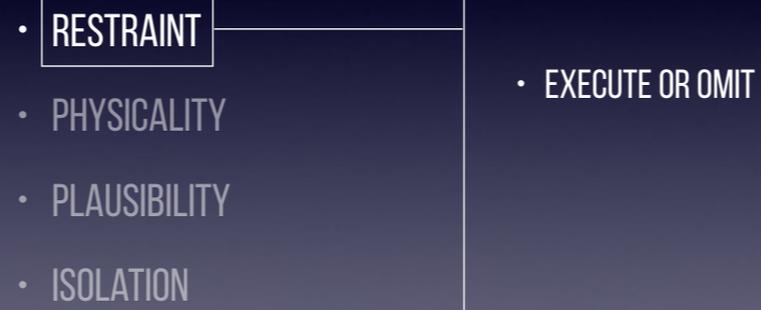
THE REAL WORLD IS FULL OF STUFF



BUT WE DON'T NEED IT TO BE IMMERSED

I believe instead of looking to video games, the real world is a much more reliable template for success in VR. In the real world, we have busy spaces and we have empty spaces - but how believable and compelling an experience is is not proportional to the complexity of a scene. In fact, we find that in the real world, we tend to get overwhelmed easily, and that is also true in VR. So not only CAN we have restraint, we should. Players respond positively once they experience it.

FOUR PRINCIPLES

- **RESTRAINT**
 - PHYSICALITY
 - PLAUSIBILITY
 - ISOLATION
- EXECUTE OR OMIT
- 

So we must execute fully on everything we attempt, or omit the feature. As an example of how this form of restraint worked in our favor, I originally thought “ok, it’s soccer. I have to have a stadium.” Then I thought about wasting all that performance on the background and just cheaped out by making it night time in an empty field. This decision has been instrumental for the project, but it was born out of saying “I can’t pull off a stadium.” very early.

FOUR PRINCIPLES

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- EXECUTE OR OMIT
 - EMPTINESS IS VALUABLE

Another aspect of restraint is emptiness. Sparse moments let the player's imagination work for you. It's amazing what they will do if you give them the opportunity. As an example, we shut the lights off between rounds so we can change out the props, which gives the player a moment to just look at the stars. It's been a happy accident but just being outside looking at the stars in the quiet is something a lot of players comment on. I'll admit when I first set it up I laid on my back to look up. That was a bit treacherous.

RESTRAINT



- EXECUTE OR OMIT
- EMPTINESS IS VALUABLE
- KNOW THE PURPOSE

You can also make pointed omissions if you know the purpose of an asset. Here's one of our targets. This is not my finest moment as an artist. In fact, this is prototype art that I made in the first week of banging on this. But you know what? The purpose of this target is to get hit with the ball and react, and it does that just fine. This art is simple, readable, efficient, and does the job at offering a reactive target for the ball.

FOUR PRINCIPLES

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That brings us to the heart of this game - Physicality.

I believe base interactions need to be fun as a toy, with no game motivation. This is especially true in VR because players spend a lot of effort to test the simulation space and just play around.

- If the player can interact with it and it's smaller than a bus, it should move when touched, even just a little.
- Don't forget that light and sound are physical and people have built in expectations that, if not met, can break immersion. Use realtime light, shadow, and positional audio.

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NOPE

YEP

These points on physics aren't really optional in VR. If you look at the example to the right, it is obvious that the guy on the hinge is more compelling on when you view it on screen. But in VR the guy on the left feels SO FAKE that it breaks your sense of immersion. It's vital to spend the time to do physics setups on anything and everything that your player can interact with.

ADD SOMETHING

FOUR PRINCIPLES

- RESTRAINT

- PHYSICALITY

- PLAUSIBILITY

- ISOLATION

- PHYSICS ON EVERYTHING!

- LIGHT & SOUND ARE PHYSICS

- LIMIT PLAYER INTERACTION

Not every game is about heading balls, but whatever your chosen mechanics, in VR you should limit the ways the player can interact and alter the world state - don't let your design write checks your physics can't cash. In Headmaster we never ask you to walk anywhere. We just put you in a spot while it's dark and start chucking balls at you. All you've got is your head, so we are lucky. You room scale hand control folks - you have to figure out how to keep things sane or you'll need a big team to pay everything off.

FOUR PRINCIPLES

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- **PLAUSIBILITY**
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Plausibility is a partner to Physicality, but they aren't the same thing. This is more about topical believability, and it is something you can actually decide. Help the player answer... What am I doing here? Can I fly? Can things move without anything touching them? Headmaster uses soccer as a bridge between the real world and the game. During this bridge phase, right at the beginning of the game, you are bringing the player from their world to yours. They are ready to learn the rules. In those first moments, you are writing a contract.

PLAUSIBILITY

- RESTRAINT

- PHYSICALITY

- PLAUSIBILITY

- ISOLATION

- KNOW YOUR CONTRACT

- USE A BRIDGE

- LATER ON YOU CAN PUSH IT

This contract with the player defines the rules of your space. You need to know them, even if the player doesn't realize they're there. Our contract prohibits the use of floating text or other bits of magic that would casually get included in video games - even sports ones. We have a scoreboard to show UI. We have this voice talking over a loudspeaker to give you direction. We keep things plausible so that later on, once they're comfortable and past the bridge phase, we can start to push the limits of the contract.

PLAUSIBILITY

- RESTRAINT
- PHYSICALITY
- PLAUSIBILITY
- ISOLATION



Plausibility is not tied to objective realism. We float things in front of the player as if they are picking items up. This seems to work without raising red flags because the player in Headmaster HAS NO AVATAR and no hands. Players seem to accept this. You're just... a head. And it's been fine.

In Headmaster keeping things plausible has even driven us to create character and narrative to explain who is building all these insane things.

FOUR PRINCIPLES

- RESTRAINT
 - PHYSICALITY
 - PLAUSIBILITY
 - ISOLATION
- YOU'VE GOT THEM
 - BE CONFIDENT
 - THEY WILL READ AND LISTEN

The Last Principle is Isolation.

Remember - You've got them. There's nothing else competing for their attention - by their own choice. When a player is in VR, they aren't going to just hit the home button like on an iPhone. You can confidently ask them to do things that you would be afraid to do in regular games.

So yeah, we have a character named Carl. He's the only employee of the Football Improvement Center and he is not allowed to talk to you. We had this idea that he'd occasionally slip you notes that give you some idea what the heck is going on.



At first, I was hesitant to have notes with words because - you know... reading. Well in our play testing people LOVE reading these notes. They appear in front of the player and are very tangible.

I had a laugh when one guy even took the time to look all the way behind the note and read what was on the back. We got lucky and had some writing because of how it unfolded.

To to wrap up, I want to show a clip that illustrates how adhering to these principles has allowed us to push the boundaries later on in the game.

