

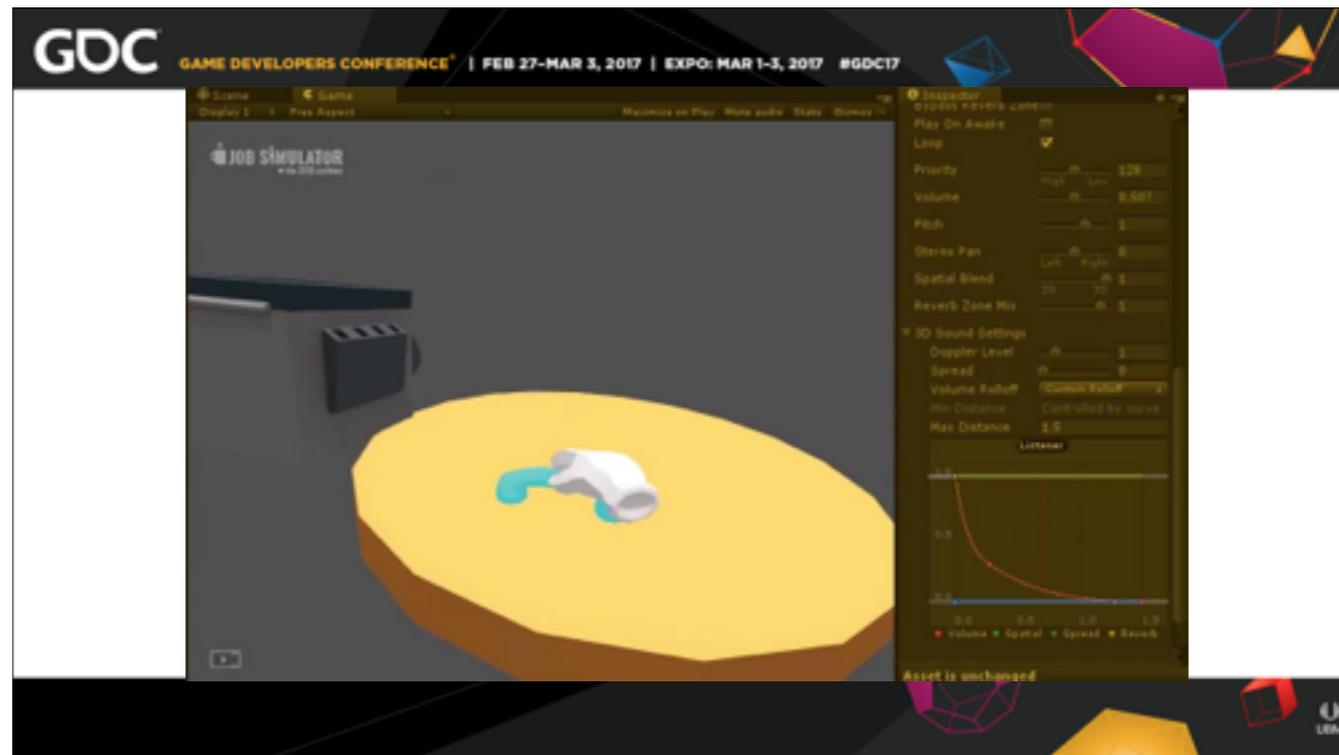
GDC

The Sound of 'Job Simulator': Audio Immersion in VR

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GAME DEVELOPERS CONFERENCE | FEB 27-MAR 3, 2017 | EXPO: MAR 1-3, 2017 #GDC17





Attention to: volume attenuation curve, and the notes on the right side.

An example of how the volume attenuation and reverb control change the feel of objects emitting sound held in your hand.

Using isolated scenes help make a decision about specific world objects like the phone.

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Designing Sound for Virtual Reality

The 3 'I's

- Immersion
 - Gameplay Focus Point
 - Blocking reality with over realism
 - Unprecedented motion tracking
- Interactivity
 - Scripted new user responses
 - create an illusion of everything
 - Interacting by drag/twist/pull
- Realism VS. Gameplay

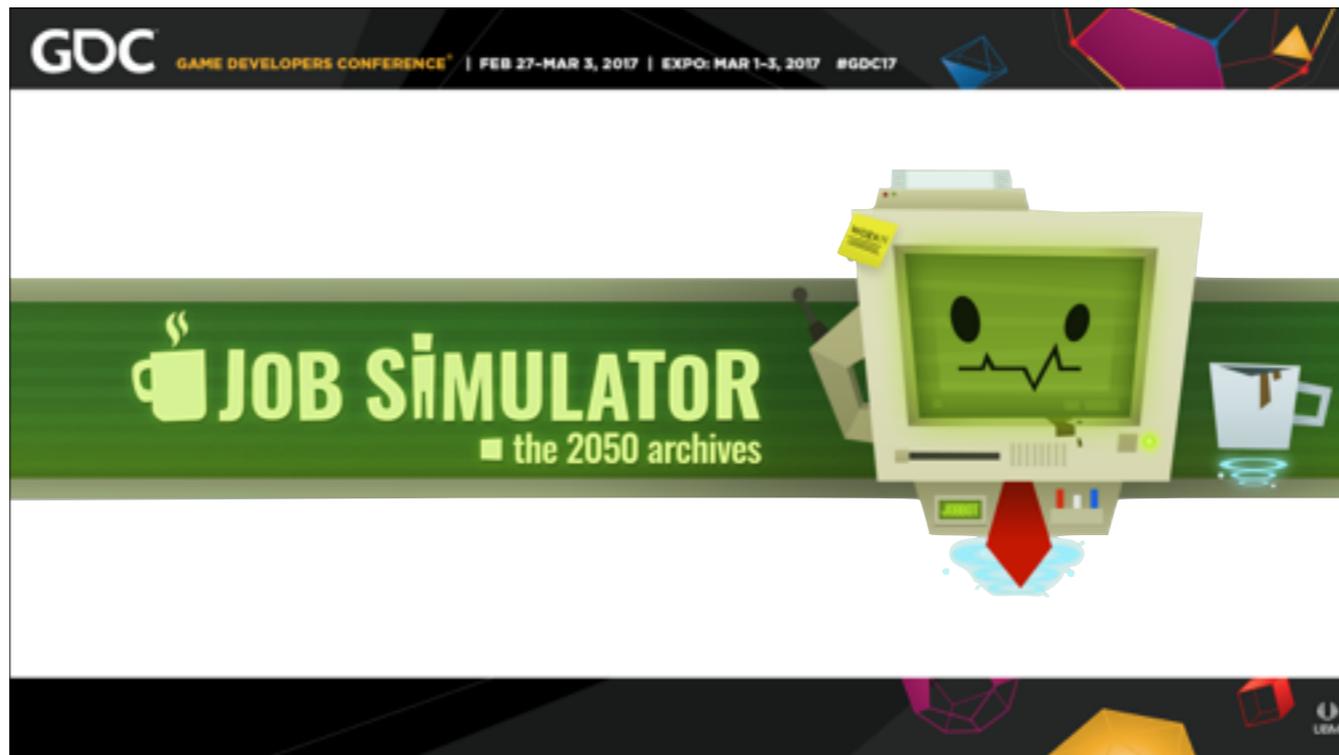
First, I want to start by mentioning the most important part in proper Virtual Reality experience. Sound.

Now that we've got that covered- what do you as a sound designer need to think of when working on VR?

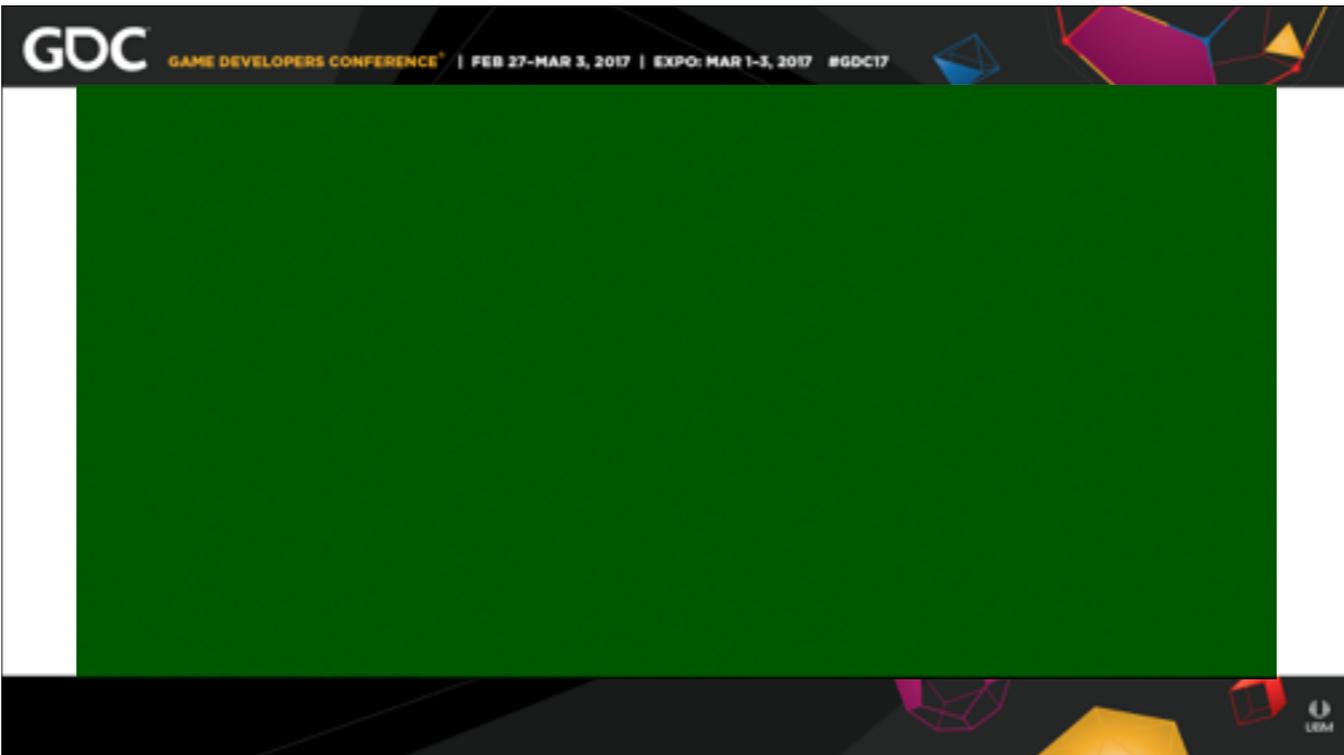
Immersion: In VR we're taken to a new world, we're covering our senses - vision and hearing, and we want to feel like we're in the deep experience we're getting into. Our goal as sound designers is to create an illusion that we're in that experience.

Interaction: With hand motion tracking, and specifically in Job simulator, we now have new types of interactions to react to. grabbing and moving objects slowly, hitting everything with everything, dragging objects, pulling levers, and all those fun stuff that are simply not possible to do when working on conventional games, mobile or PC.

Realism VS. Gameplay: It is the internal battle between creating the most immersive experience possible, and the need to give focus to the story line of the game.



We'll see a quick video demonstration of how it sounds and I'll explain a few design choices I made for it to sound the most interactive and flexible way I found.



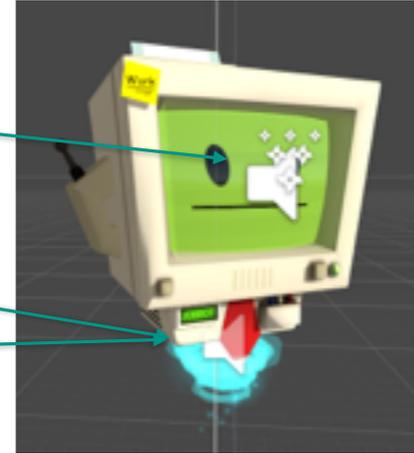
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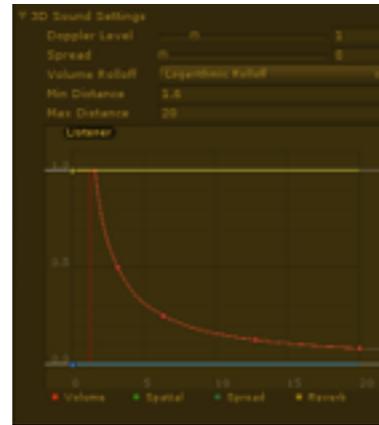
Bot Motion sound

- Voice
- Hover
- Movement

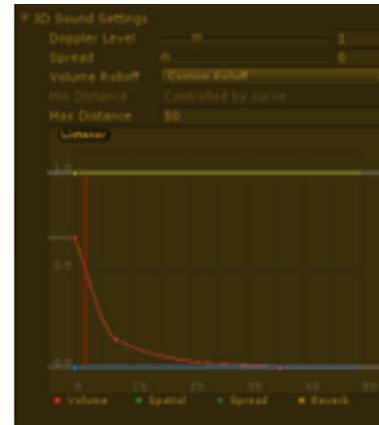


Oculus audio SDK, Inverse square attenuation curve, annoying sounds, focusing on what's important in the game.

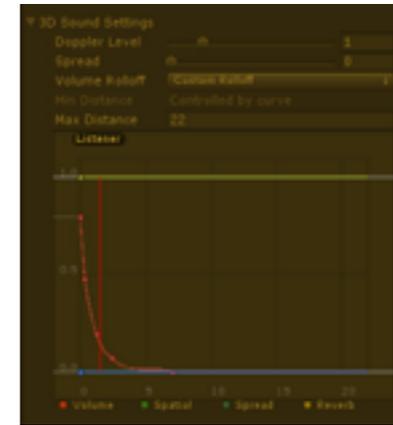
Bot Voice

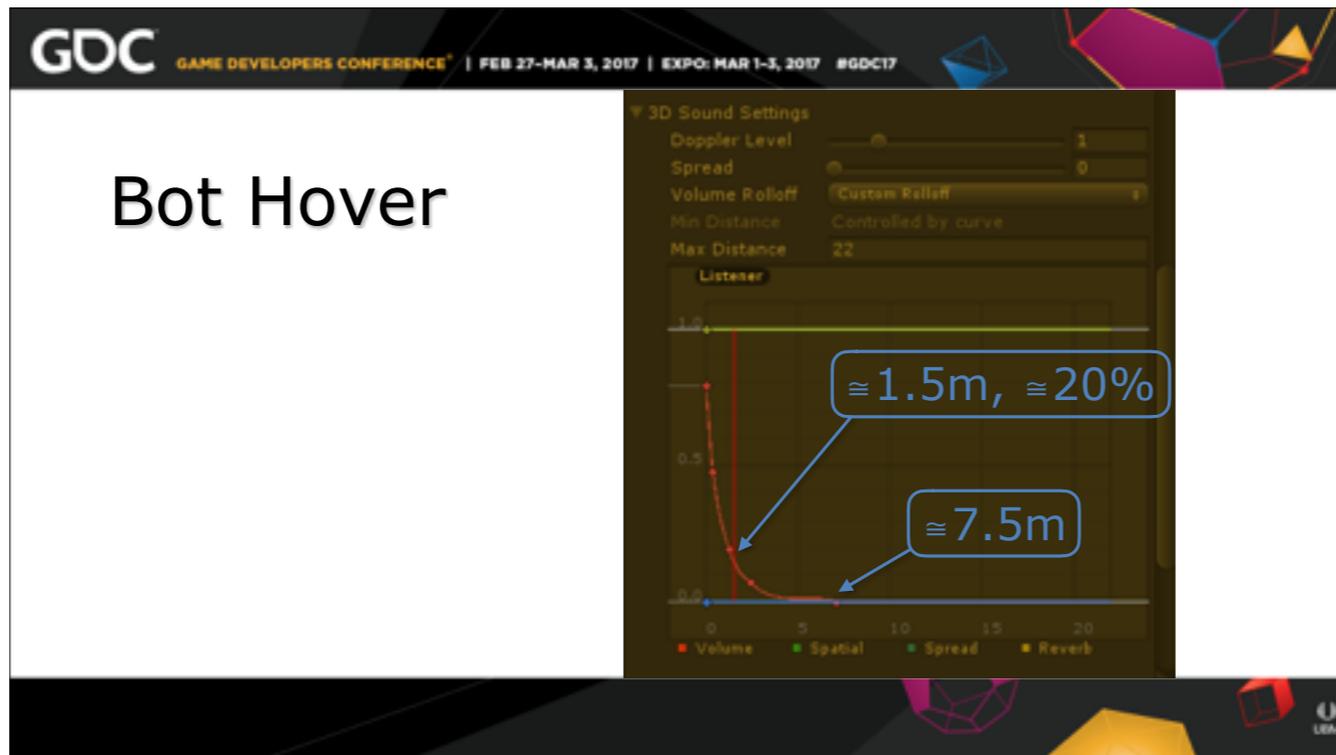


Bot Motion



Bot Hover





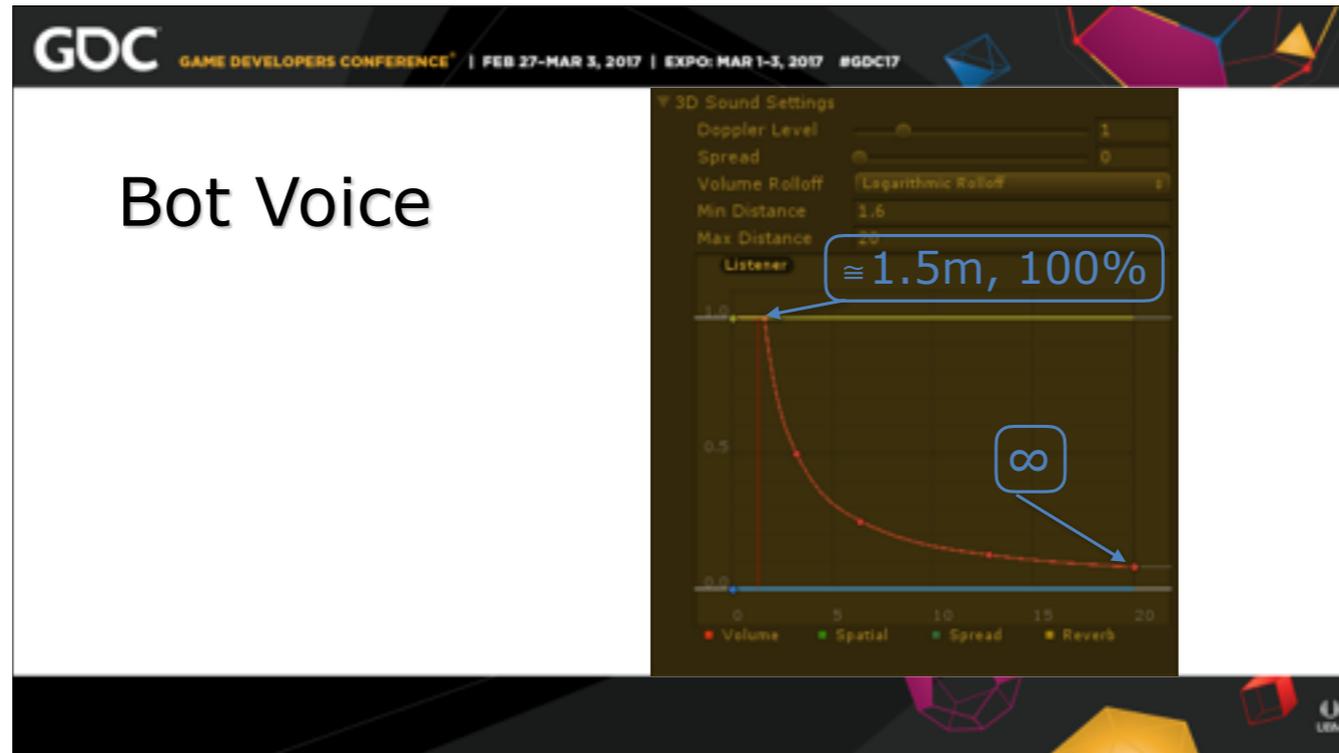
Looping continuous, may be annoying.

Fun fact: 5 sources of the same sound creates a cumulative single sound.
make sure to variate several audio sources representing the same thing.



Bot Motion

Non-continuous sound, sound appears only when a bot moves, and represents that motion.
When it's heard, it allows the players to change their focus towards the bot in motion.
Adds to the atmosphere and to the events that are happening in the background.



Focus point of the game.

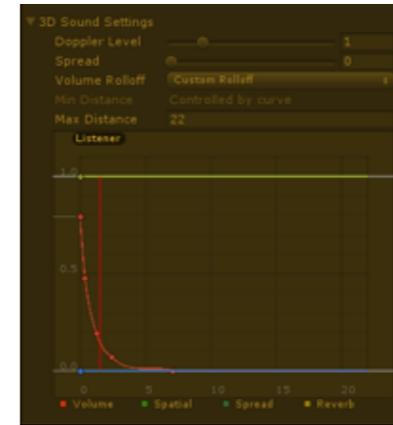
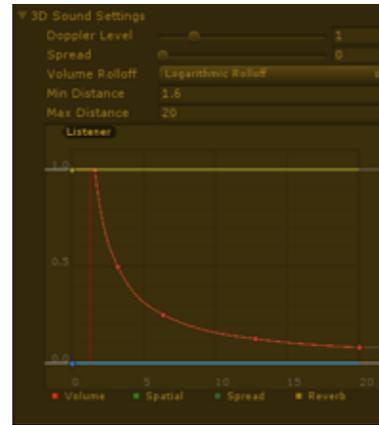
A priority in the battle between realism and gameplay, that deserves special attention to.

If the player misses voice lines that guide him through the story, he may be stuck in the game, or he may miss the reason why he's doing the action.

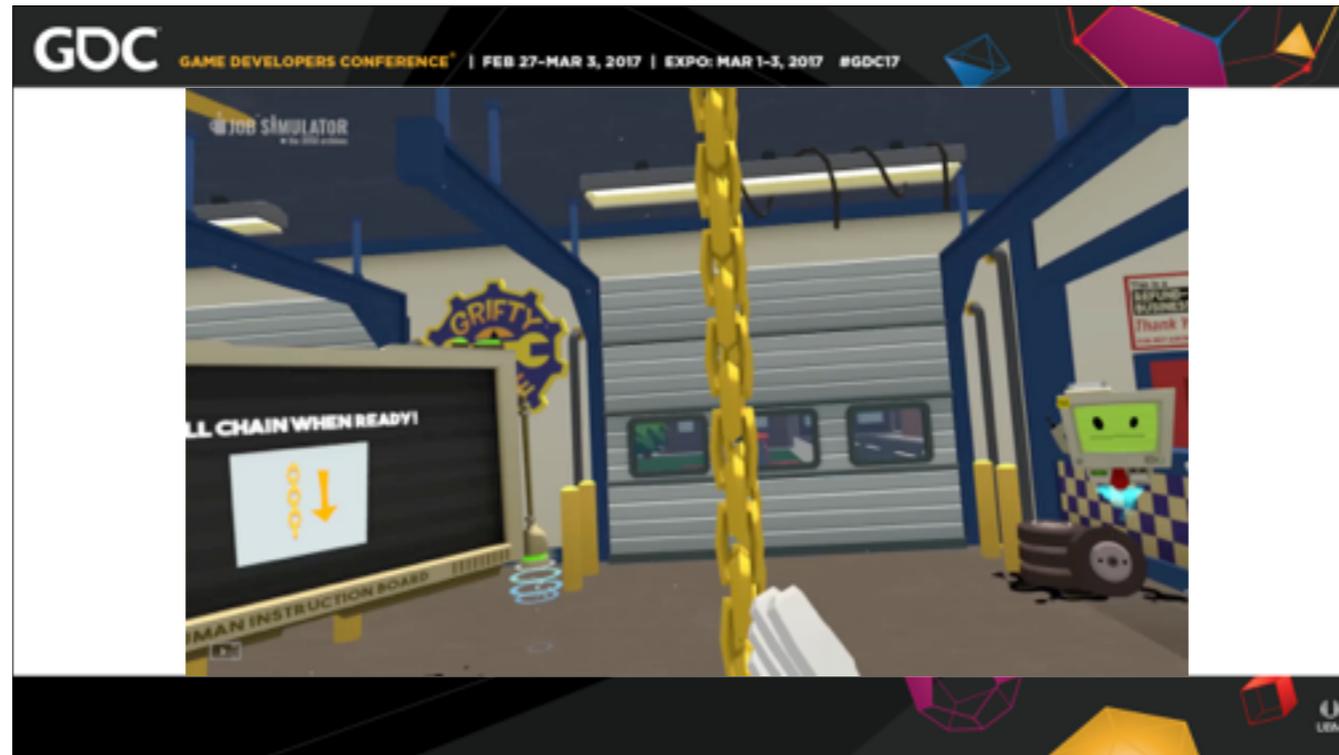
Bot Voice

Bot Motion

Bot Hover



Next: Example of interactive item



You ask me - Daniel, it's a chain, what's the problem?

when designing sound for video games, mobile and PC, and video production post you usually know the length of the action I need to make sound for. In this case you cannot tell how long or fast the action will be, so you need to create a system that responds to it.

How to approach grabbable intractable objects

- Analyze and understand the objects physics
- Observe audible feedback
- Respond with an appropriate system





Ambience

- Everything visible needs attention
- Room ambience IS acceptable but only in strategic points
- Complete silence sounds unrealistic
- No 2D sounds (Mostly)

If art was made for it, I need to examine it.

Complete silence -

1. Constant sound helps isolate player from real world
2. No sound makes players feel like something is broken in the system immediately.
3. wireless headphones have threshold to turn off to save battery life.

Head Locked: internal voice/headphones

Non-diegetic: sound is represented as coming from a source outside story space.

Ambisonics as potential solution for room ambience.



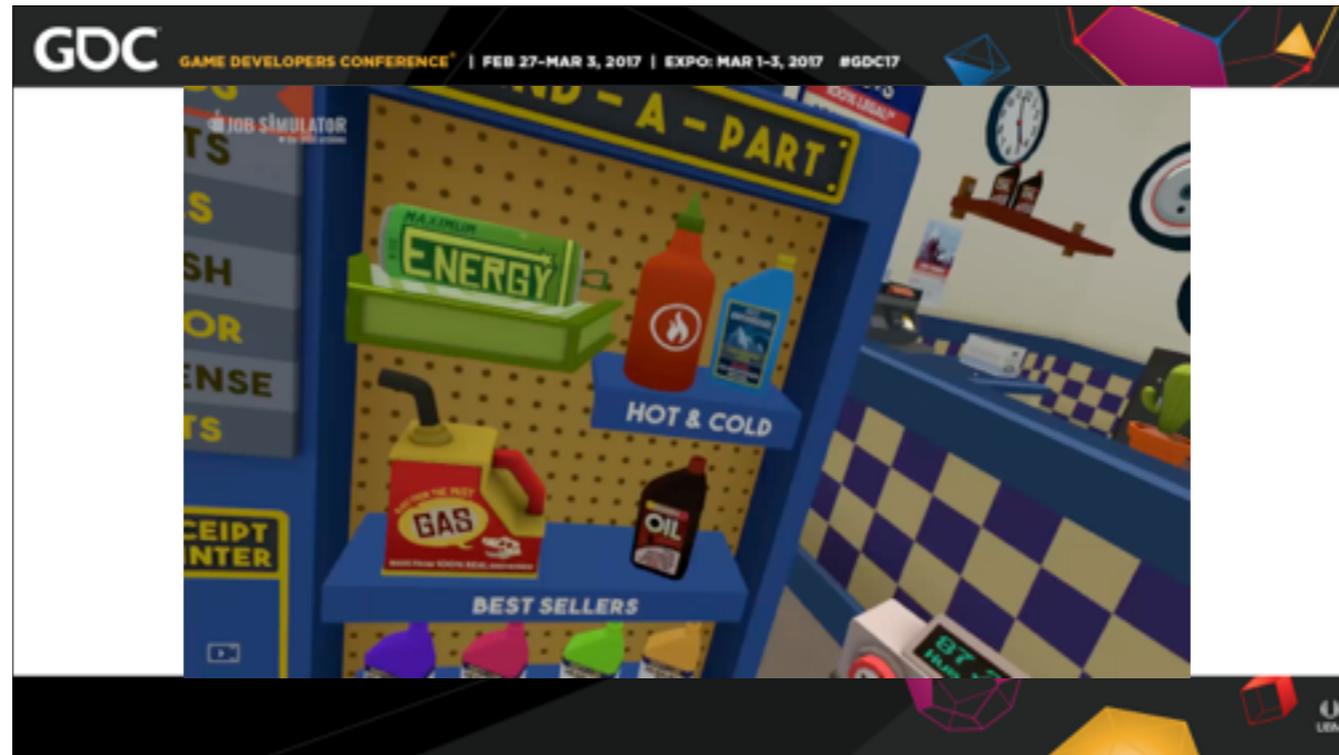
Other things to consider

- Object Impacts- Material/Surface, Specific Items (vs.)
- Eating/Drinking/(Vomiting?) - type of food, potential gender, is it continuous?
- Pouring - Different liquid density

Impact specific - each object in the world has a surface defined specifically for the audio system.
Specific library of sounds that react to the object you're eating.
Looping pouring sound that fits the type of material being poured.

THE JOB SIMULATOR
by 3Dcubed





Show an example from Auto-mechanic radio
and an example from convenient store love song

Add video example of phone moved around ear!!

What We've learned

- Immersion is key
- Its the small details that matter
- Create a realistic sounding environment
- Adjust to gameplay focus points

Thank you



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