VRDC

Maths to Mechanics

Using Mathematical Logic to Implement Intuitive Gameplay

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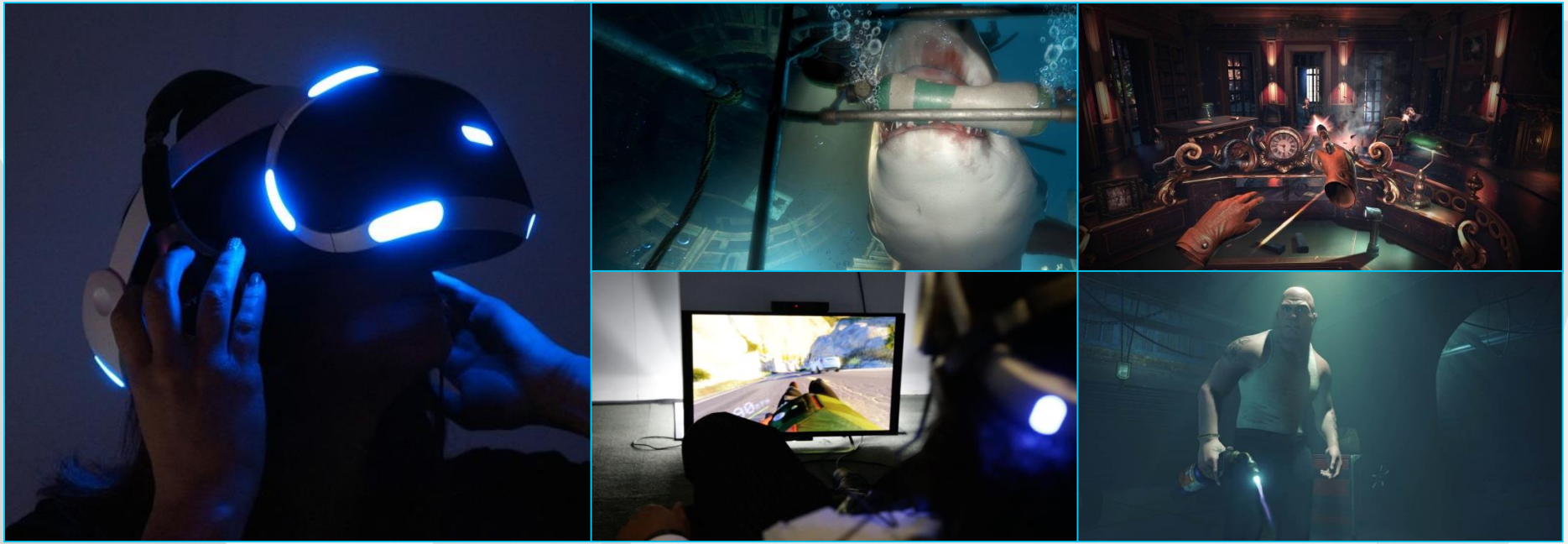

PlayStation®VR Demos

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The London Heist

Interrogation

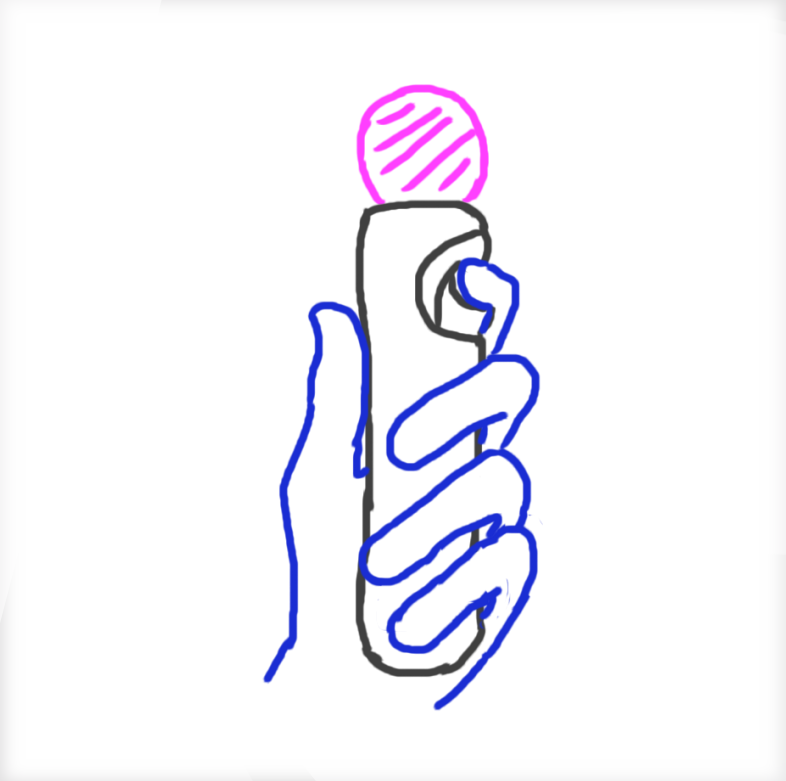
Heist

Getaway

London Studio

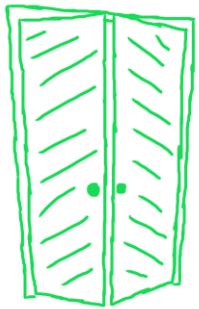
Game Controls in VR

Contextual Grasp



Types of Objects

Dynamic

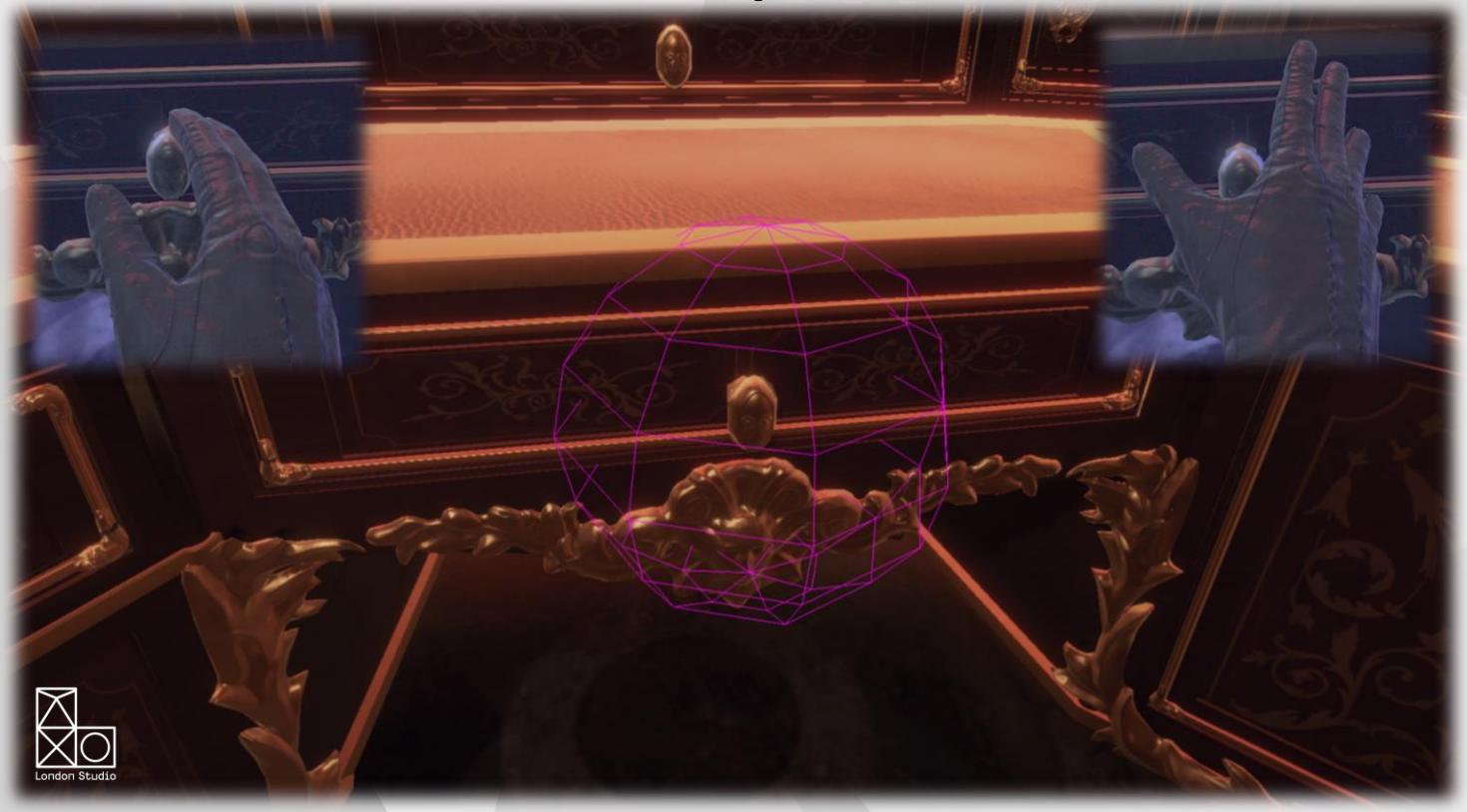


Constrained

Static

The Drawer

Interaction Sphere



Hand on Controller

- Hand does grasp animation
- Hand stays connected to the PlayStation®Move

Hand on Controller

Hand on Controller

- Visual issues break immersion

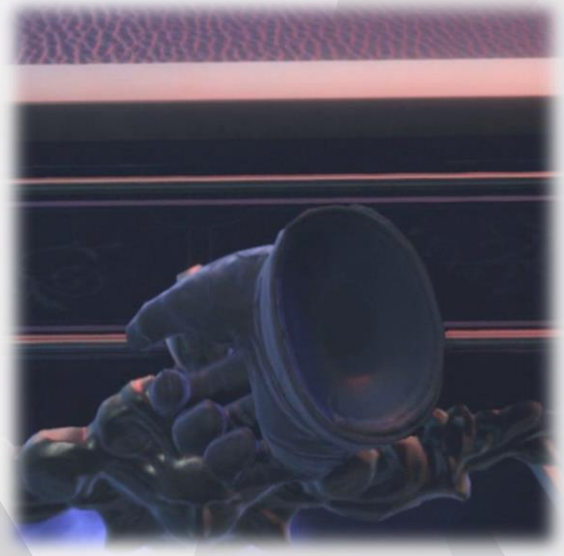
Hand on Drawer

- Hand does grasp animation
- Hand snaps or interpolates to fixed connection pose

Hand on Drawer

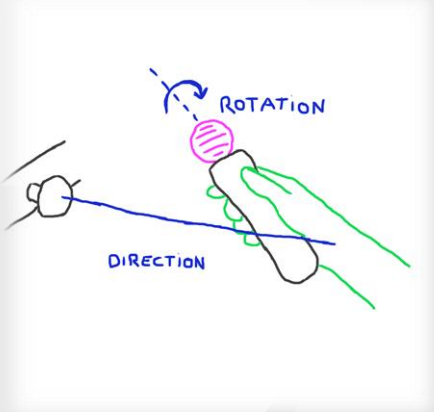
Hand on Drawer

- Disconnect breaks immersion



The Happy Medium

- Hand does grasp animation
- Hand interpolates to fixed connection position
- Hand orientation controlled by the Move

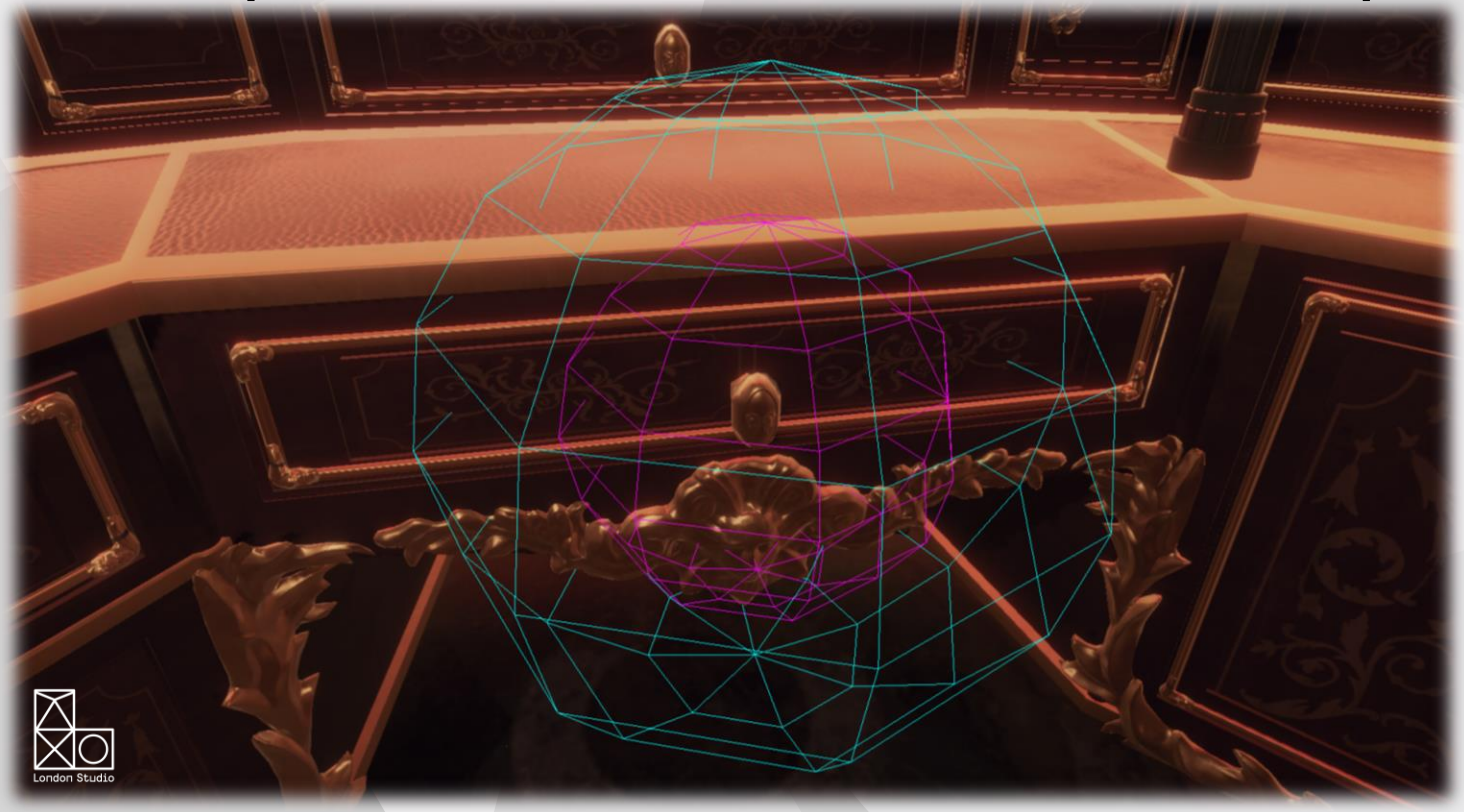


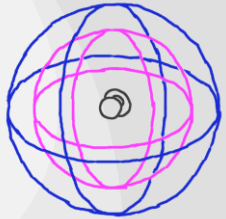
The Happy Medium

The Happy Medium

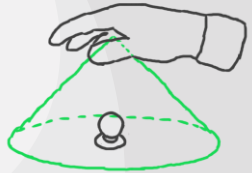
- No visual issues to break believability (if you apply limits)
- The hand still feels connected

Improvement: Disconnect Sphere



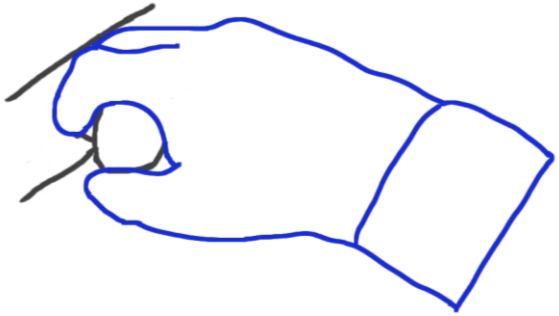


Improvement: Direction Check



Interaction Summary

Connect

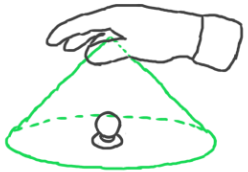


Interact

Disconnect

Interaction Summary

Distance Check



Direction Check

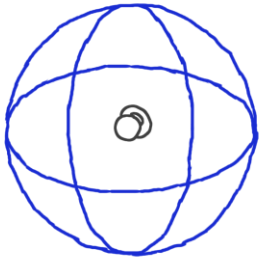
Connect

Yaw

Pitch

Roll

Interact



Distance Check

Disconnect

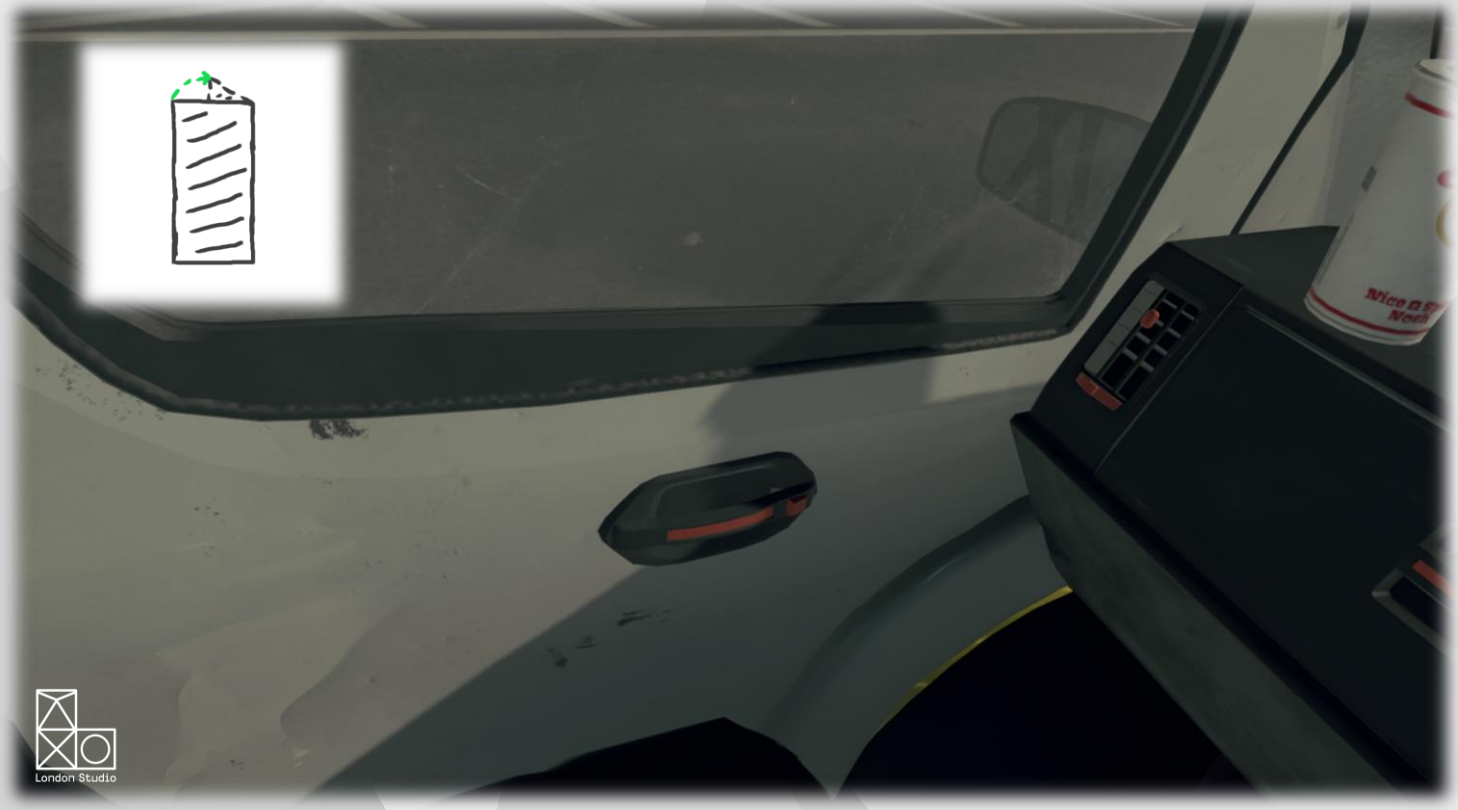
Cupboard Door

Yaw

Pitch

Roll

Car Door



Yaw

Pitch

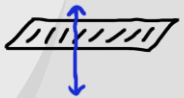
Roll

Visor

Yaw

Pitch

Roll



Radio Dial

Yaw

Pitch

Roll

Objects in Action

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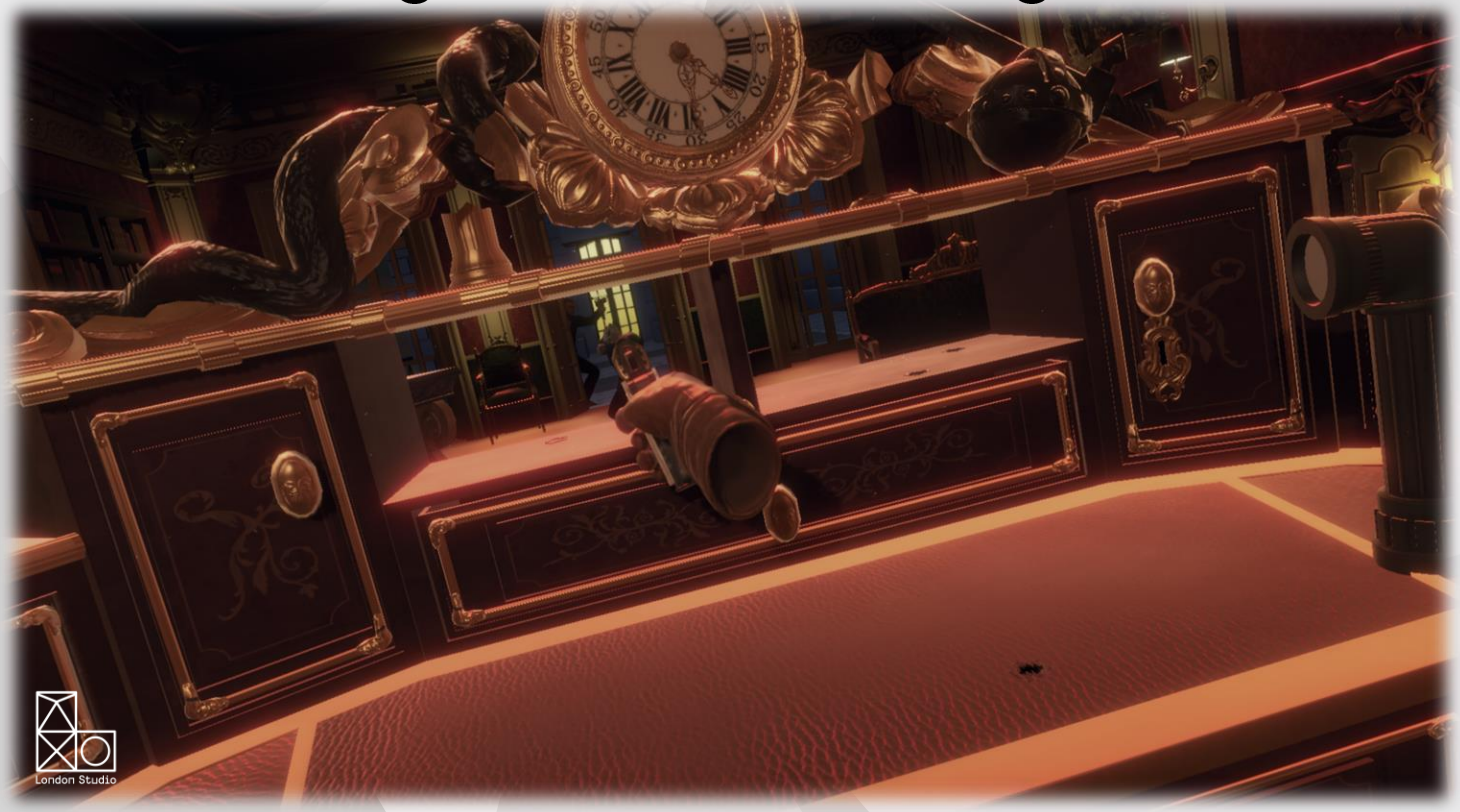
The Gun

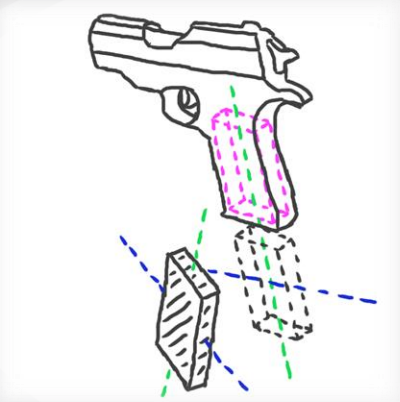
Aiming and Shooting



Loading

Slot Check

Position Check



Alignment Check

Speed Check

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Loading

Align

Slide

Loading in Action

Gun Play in The London Heist

Loading Hollywood Style

Zombieland now available on Blu-ray™

Loading Hollywood Style

Observations

- The interaction system works with either hand

Observations

- Gameplay design and art design go hand in hand

Observations

- Sometimes intuitive means NOT using hand interactions

Conclusions

- Keep it simple
- Use the context to determine the action
- Make it feel real rather than be real
- Respect the rules of your world

Thank you!

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