





# Playtesting VR

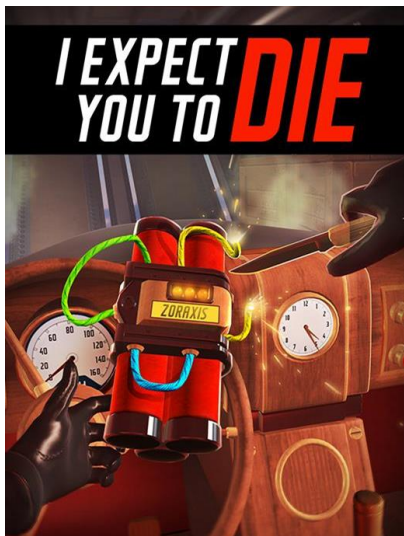
## Brownboxing, Spycams, and Fuzzy Rugs

Shawn Patton  
Principal Designer @ Schell Games

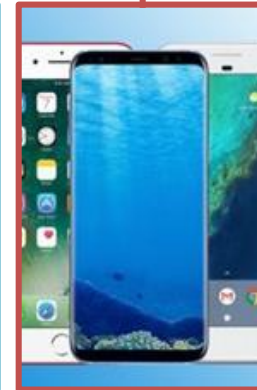
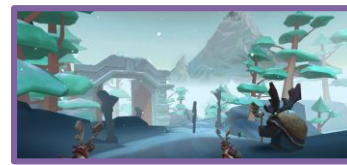
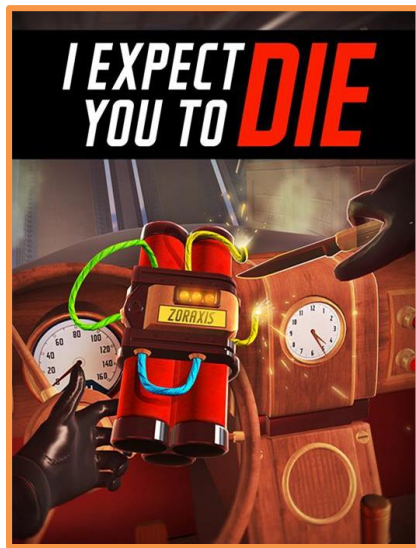


# Shawn Patton

Principal Game Designer // VR Advocate











# Playtesting









**Virtuality!**  
**276x372 per eye!**  
**30 fps!**







**EXTREMELY  
DEAD**



1935 - Imagined by sci-fi authors

1968 - VR system created by Ivan Sutherland



1984 - Jaron Lanier - VPL Research "EyePhone"



1995 - Nintendo's Virtual Boy

Time



1990 - "Virtuality" debuts  
in arcades and the  
cinema classic Hackers



1998 - DisneyQuest VR

2007 - 2018  
VR BOOM!





2007 - Valve starts coding Vive



2012 Oculus Kickstarter \$2.4 million

2015 Samsung Gear VR



2017  
Microsoft MR

Time

2009 PSVR work begins



2014 Facebook buys  
Oculus for \$2 billion and  
Google Cardboard



2016 Vive, Oculus,  
PSVR, & Daydream!!



First VRDC!

2018  
Vive Focus  
Lenovo Mirage  
Santa Cruz??





# Consequences of Newness



# Consequences of Newness



# Consequences of Newness





# Consequences of Newness



# Consequences of Newness

**VR**



# Consequences of Newness





# Consequences of Newness



# Consequences of Newness



**Rapid Iteration &  
Playtesting**





# Tools of Rapid Iteration and Playtesting



**Paper Prototyping**



**Whiteboxing**

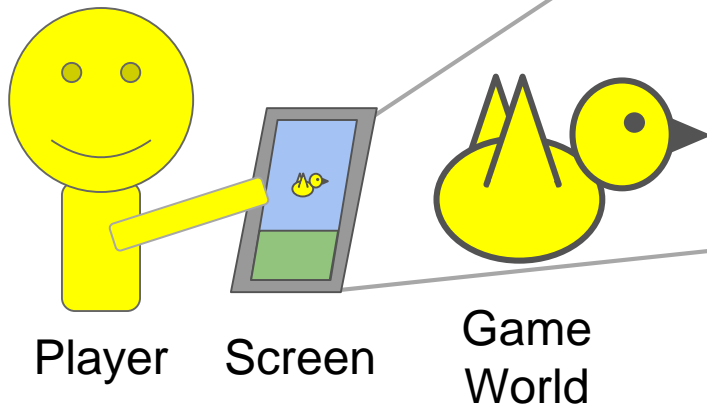






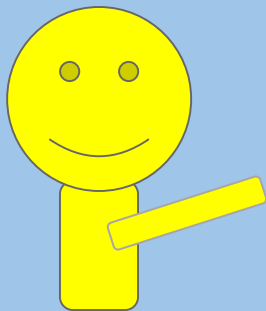


# Screenspace Games

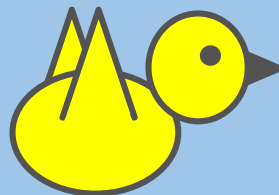




# VR Games



Player



Game  
World









# Benefits of Brownboxing for VR



# Allows for Flexible Staffing & Team Bonding



# Allows for Flexible Staffing & Team Bonding



# Defines Affordances, Attention Draws, & Spheres of Interaction



Nature's  
3DOF Controller

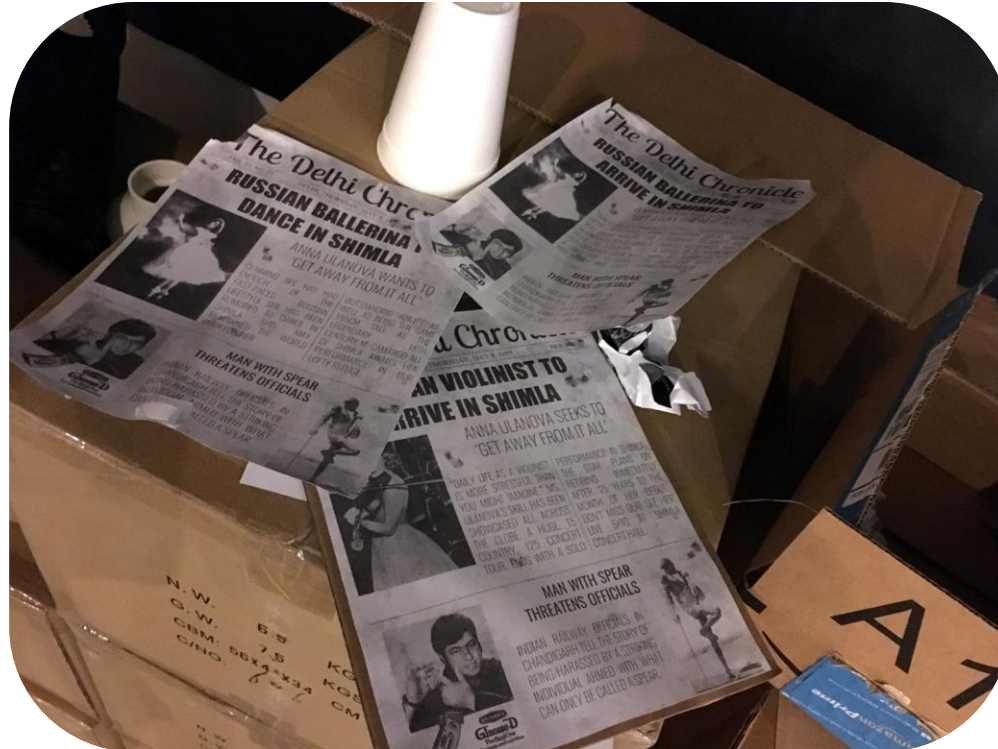




# Defines Affordances, Attention Draws, & Spheres of Interaction



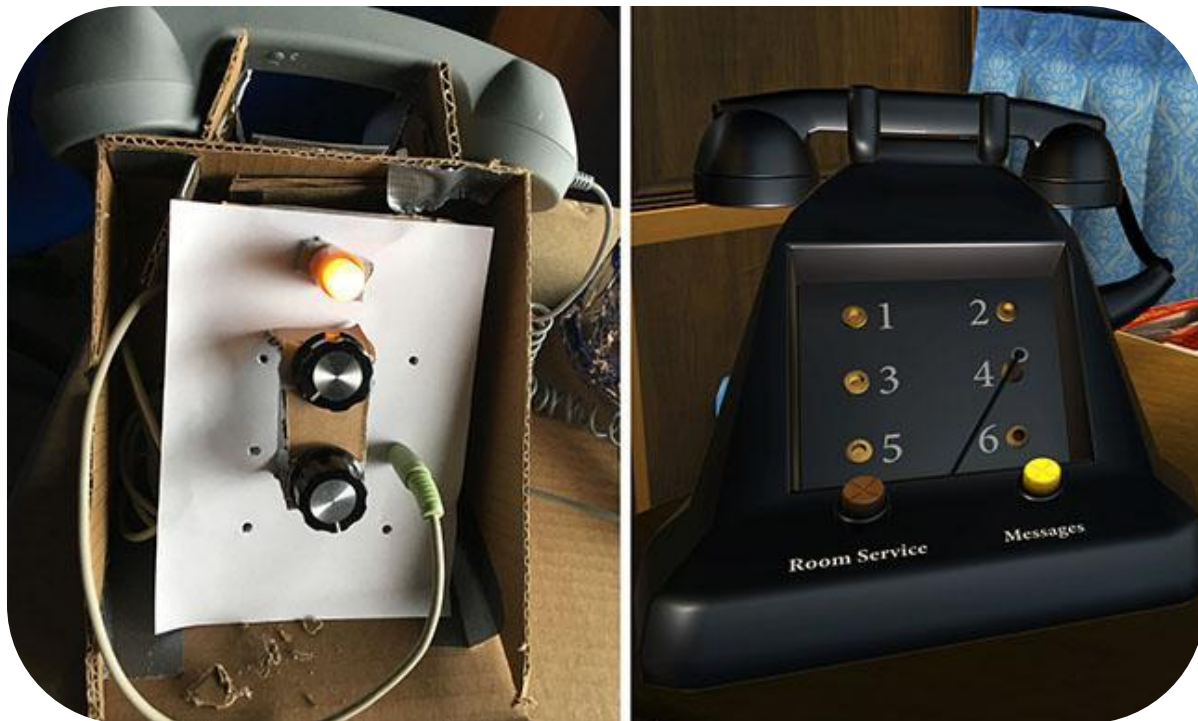
# Allows for Rapid Iteration



# Quick Aside - Anyone Can Brownbox!

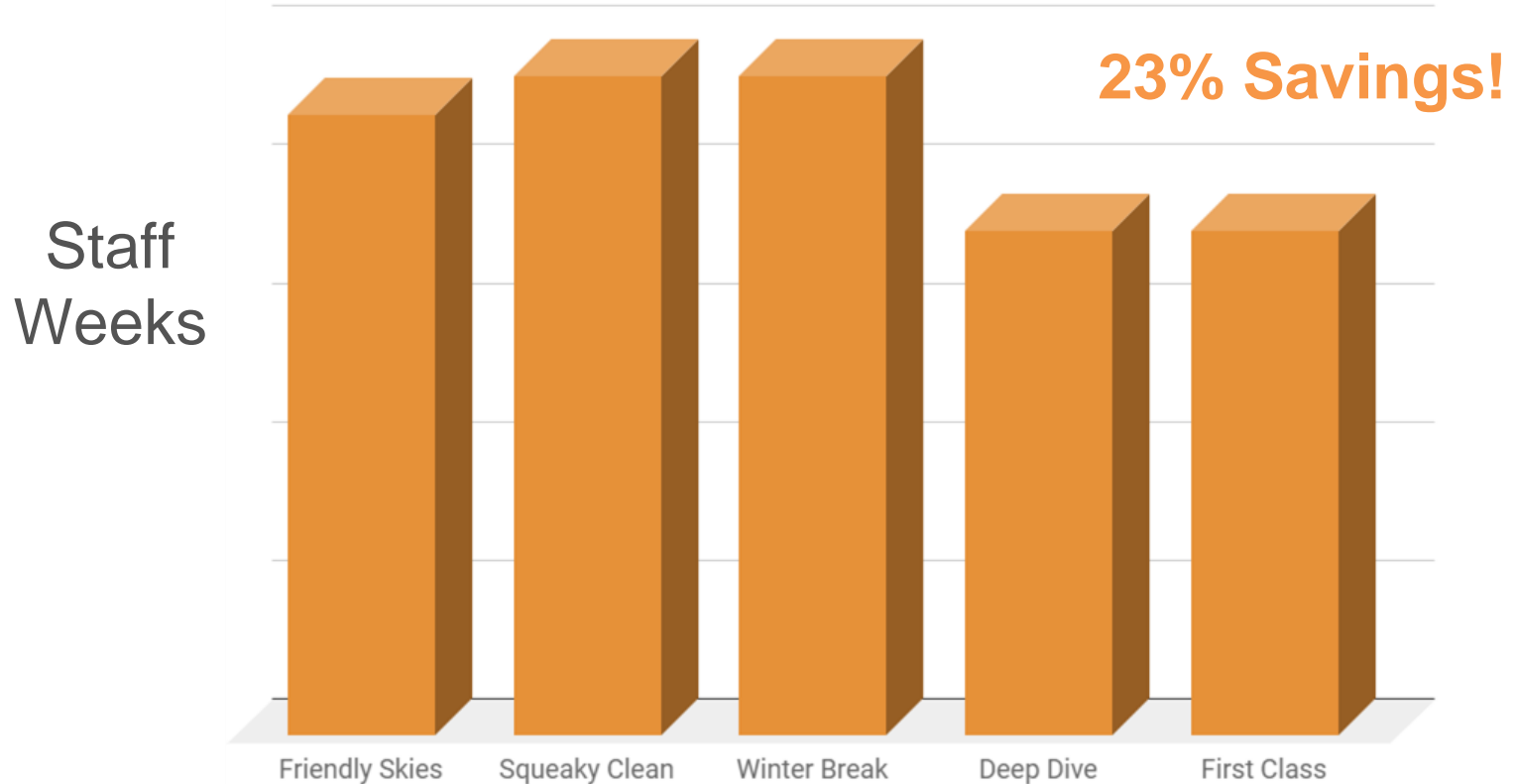


# Gives Usable Results





# Save Time & Money



# Brief Recap

- VR is still new... and changing... teams need to iterate and test a lot!
- Brownboxing can help
  - Pros
    - Allows for Flexible Staffing & Team Bonding
    - Defines Spheres of Interaction & Shows Attention Draws
    - Allows for Rapid Iteration
    - Gives Usable Results
    - Saves Time & Money



# The Considerations



# Requires Physical Space





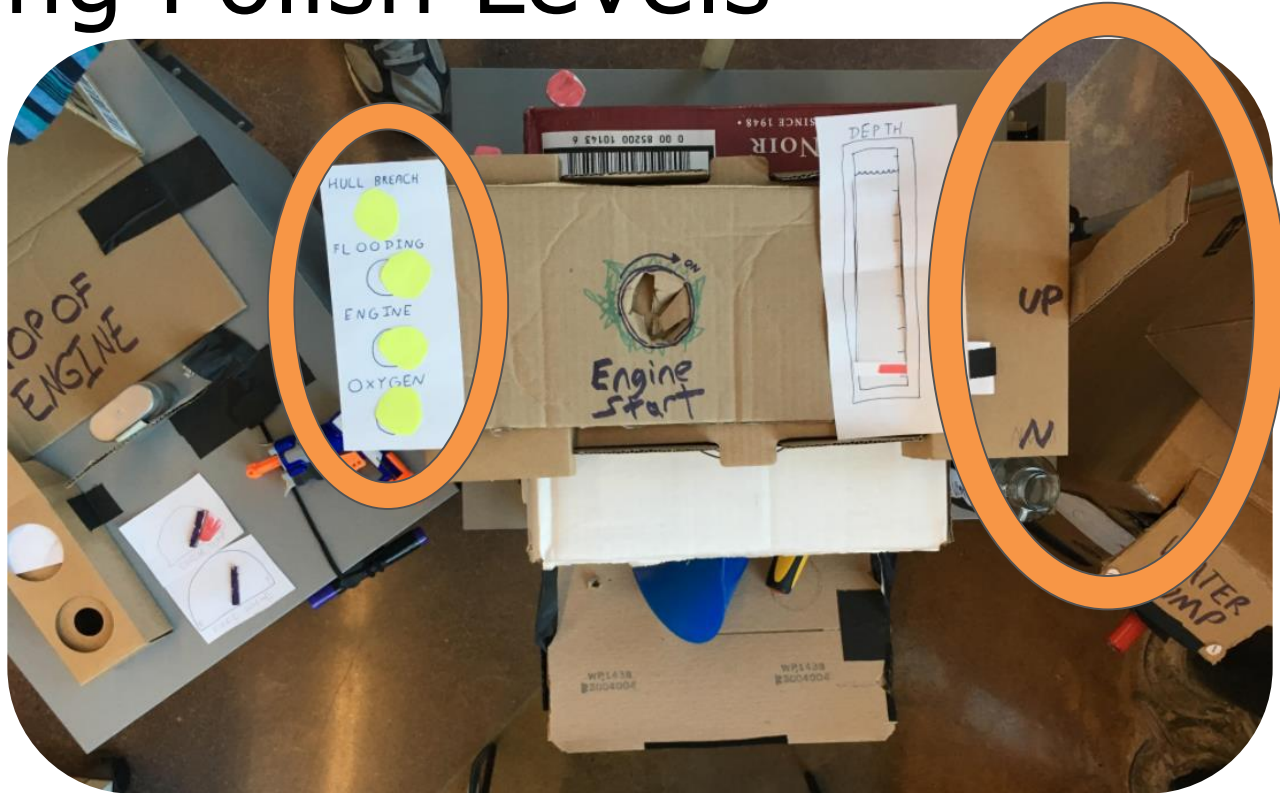
# Multi Room Requires Imagination



# Harder to Simulate Magic & Projectiles



# Beware False Results From Varying Polish Levels



# Brief Recap

- Brownboxing
  - Considerations
    - Requires Physical Space
    - Multi-room Requires Imagination
    - Harder to Simulate Magic & Projectiles
    - Beware False Results From Varying Polish Levels





# Practical Process of Brownboxing



# Set Clear Goals



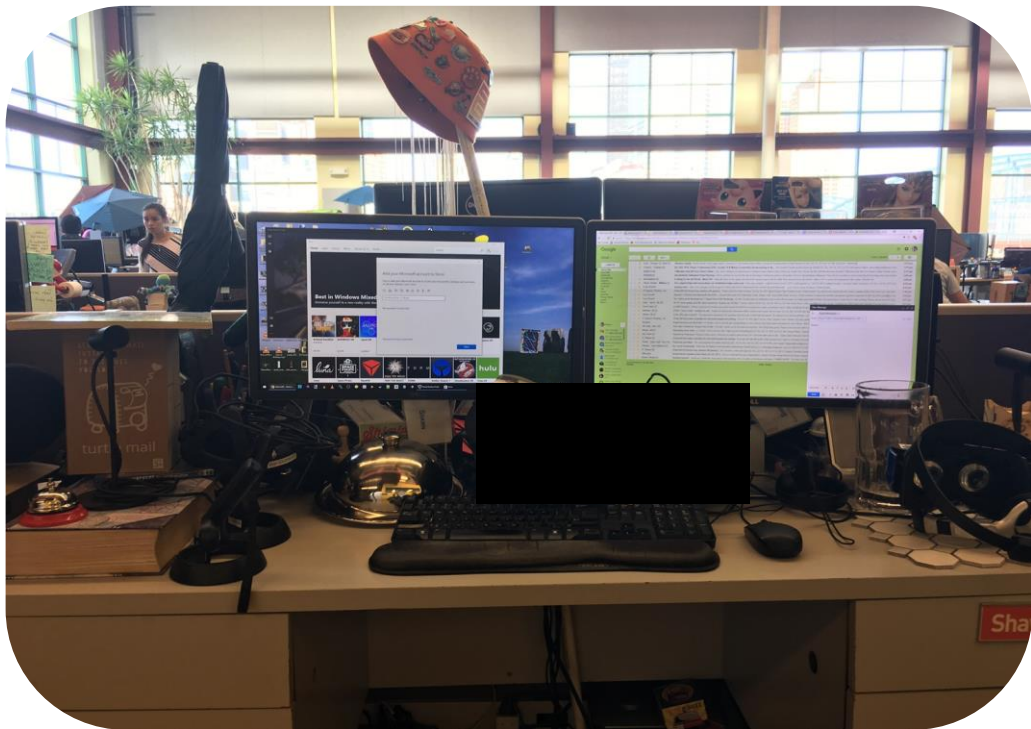
# Remain Flexible





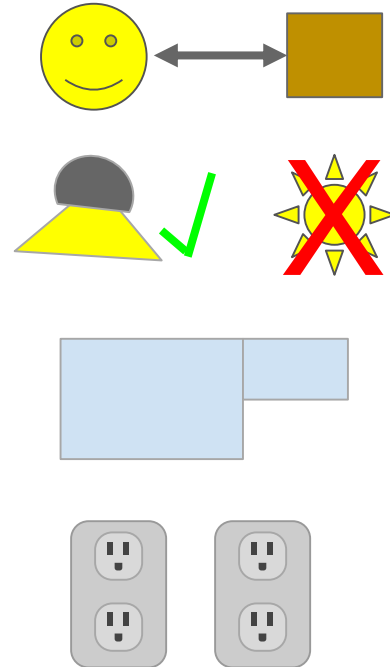


# Collect Materials



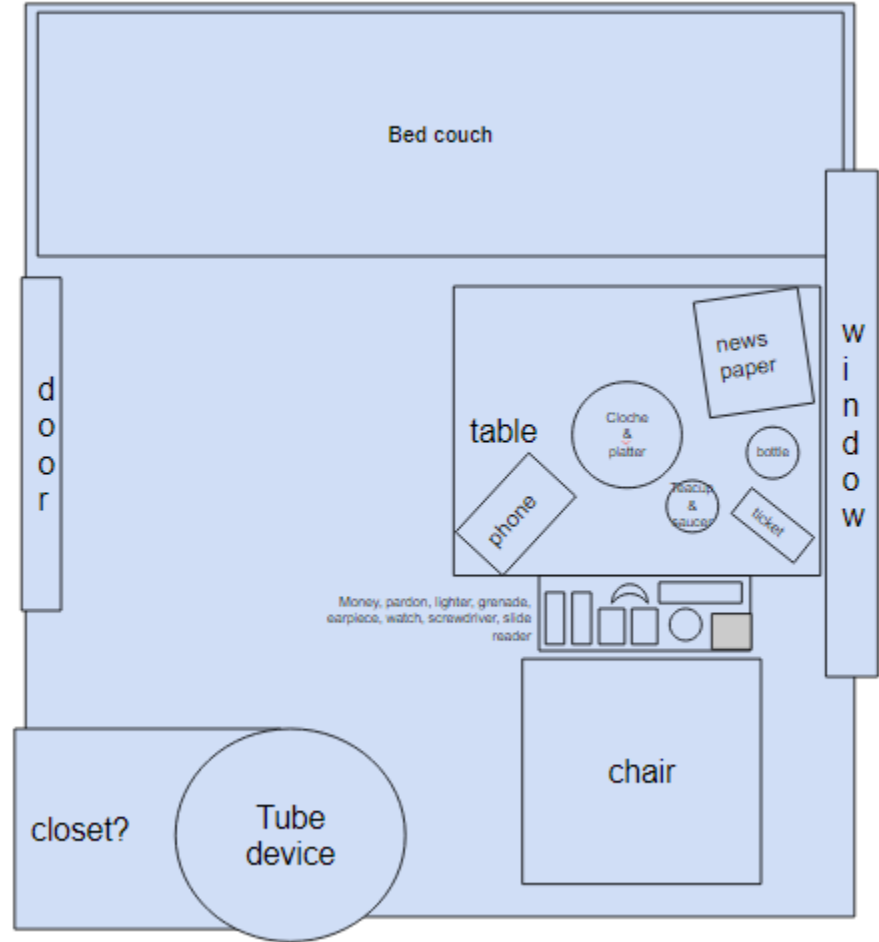
# Find the Ideal Location

- 1 - Good distance from people trying to work/prying eyes
- 2 - Lighting that can be controlled
- 3 - Space for finished product and raw materials
- 4 - Power outlets



# Construction Tips

- A. Top-down sketch
- B. Limit duct tape
- C. Hot glue gun
- D. Thick markers
- E. Print things out
- F. Think outside the box



# Spend your time on player feedback







BA0032-120C1C  
8-22-14



# Spend your time on player feedback



# Spend your time on player feedback



# Brief Recap

- Practical Process
  - Set clear Goals
  - Remain Flexible
  - Collect Materials
  - Find the Ideal Location
  - Top sketch, hot glue, thick markers, print stuff, not just cardboard
  - Spend time on Player Feedback





# Time to Playtest Your VR Brownbox



# Brownbox Playtest Checklist

1 - Brownbox

2 - Script

Universal Testing Script For Users

Task	Expected	Actual	Notes
1. Open the application	Application opens successfully	Application opens successfully	
2. Log in with valid credentials	User is logged in successfully	User is logged in successfully	
3. Navigate to the main menu	User is redirected to the main menu	User is redirected to the main menu	
4. Click on the 'Add New' button	A new item is added successfully	A new item is added successfully	
5. Edit an existing item	The item is updated successfully	The item is updated successfully	
6. Delete an item	The item is removed successfully	The item is removed successfully	
7. Search for an item	The search results are displayed correctly	The search results are displayed correctly	
8. Filter the search results	The filtered results are displayed correctly	The filtered results are displayed correctly	
9. Export the data to a CSV file	The data is exported successfully	The data is exported successfully	
10. Print the report	The report is printed successfully	The report is printed successfully	

Notes: The user was able to perform all tasks successfully. The application is stable and responsive. The user interface is intuitive and easy to use. The application meets the requirements and is ready for deployment.



# The Script

## oBrown Boxing Script For Train

Reset the room:

Table Compartment: <ul style="list-style-type: none"><li>• Money</li><li>• Pardon</li><li>• Earpiece</li><li>• Stun Grenade</li><li>• Lighter</li><li>• Watch</li><li>• Screwdriver</li></ul>	Table: <ul style="list-style-type: none"><li>• Newspaper</li><li>• Ticket</li><li>• Vodka</li><li>• Glass</li><li>• Platter</li><li>• Food</li><li>• Cloche</li><li>• Phone (light on)</li></ul>	Proctor Zone: <ul style="list-style-type: none"><li>• Earpiece</li><li>• Live grenade</li><li>• Device</li><li>• Bell</li><li>• Gun</li><li>• Spear</li><li>• Vehicle paper</li><li>• Plane paper</li></ul>	Reset: <ul style="list-style-type: none"><li>• Phone to 4</li><li>• Tube comp. selector to 0</li><li>• Compartment hidden</li><li>• Gun, armored vehicle, spear, and grenade with Assassin</li></ul>
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Outside the blue box:

You've installed an update to I Expect You to Die. When you start the game there is a new Mission Reel in the door.

Handler: "Good news agent, I have found some money in the budget to get you that well earned vacation you've always wanted. Grab the new reel in the door and we'll get you off and running."

You put in the mission reel and it shows the Agency's Human Resources paid time off policy. "Knowing your penchant for moving vehicles, I've scheduled you on a luxuriant train ride across India. All the way from Delhi to the vacation wonderland that is Shimla."

The next slide shows how to save receipts for reimbursement. "You'll enjoy first class treatment and spectacular views along the way, I'm really quite jealous." You click start.

-- Lead them into the train and into the seat. Shut the door. Say the window has its blind down. --

As we progress, feel free to ask me to clarify what you see or what's happening. I'll fill in for anything the brown box lacks. Ok, you're asleep and the next sound will wake you.

-- Eeeeeeee brake squeal --

Conductor: "Sorry for the interruption folks. We've encountered a delay of some kind. We'll sort it out and have you moving again shortly. Please, for your safety, remain in your compartments."

If they press Room Service: "Err, sorry compartment 4, we're tending to some difficulties up ahead, please stay in your compartment for now."

Eventually they'll notice the blinking light. When they pick up the phone and press the button:

Voice : "Compartment 4, 1 message"

Handler : "Ah, well, I trust you are enjoying your vacation agent. I hate to burden you, but I do have one small favor to ask. I've modified the cabin's table in the usual way. When you get this message, find the earpiece inside and pop it in. 'Til then" <click>

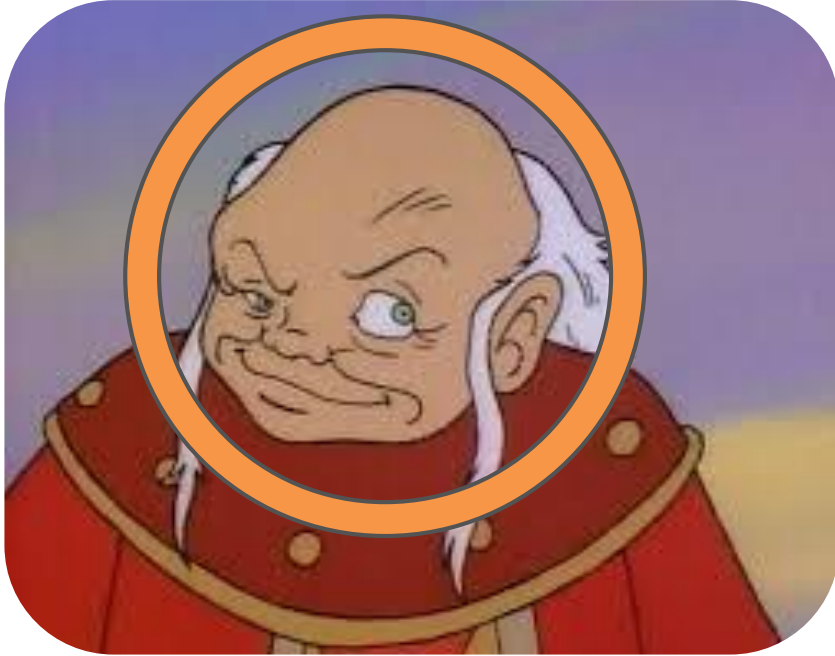
Voice : "Press messages to repeat."

Handler phone call if you don't do it: "Agent, glad I caught you. Just one small favor, I've modified the cabin's table in the usual way, press the red button, find the earpiece inside, and just pop it in. I really must insist."

-- Once they put it in, take it from them. --

Handler (on earpiece): "Ah, much better, just like old times. It's come to my attention that there might be a Zor defector, a traitor to Zor, on the very same train you're on, what a strange coincidence. Regardless, you must make contact with them, they have information we need. Tap into the phone system and give a listen for anything suspicious. Once you've figured out what cabin the defector is staying in, send them a token, something small, something to prove you're from the agency. Just, umm, make sure you send it to the correct compartment agent, you never know who else might be... nearby."

# Your Role



# Your Role





# Brownbox Playtest Checklist

1 - Brownbox

2 - Script

3 - Questions

Universal Testing Script for Users

Task	Script	Notes	Pass/Fail
1. Open the application	Click on the application icon		
2. Log in	Enter the username and password		
3. Navigate to the main menu	Click on the main menu icon		
4. Select a task	Click on the task icon		
5. Complete the task	Follow the steps in the script		
6. Save the task	Click on the save button		
7. Exit the application	Click on the exit button		

Notes: The script is designed to be used by a tester who is not familiar with the application. The script should be read aloud to the user, and the user should be guided through each step. The script should be modified to match the specific application being tested.



# Two Types of Data:

## *Stream of Consciousness*

Kwame 4:06

56 min

Not noticing screws

Got it

Tries sending vodka to 2

4:25 feels like he's on to something

Two people Russian and message on 6

\*\* have room service say room number

Sent watch and

Wants to tell them where he is

\*\* only send one thing

4:36

How can I read morse

Sent watch, was sad about, wanted to save her, maybe send

stun after watch

\*\* stun grenade after watch audio

\*\*gave hint on 2nd Morse

4:47

Plane attack, can I call room service, panicked guy

*80+ playtests  
for 1 Level*

- Name & start time
- Goal related notes
- Unexpected actions
- Bugs \* - \*\*\*
- Checkpoint Timestamps
- End time / total time

# Four Magical Questions

Universal Across All Games and Experiences

1. What was the most frustrating moment or interaction?
2. What was your favorite moment or interaction?
3. Was there anything you wanted to do that you couldn't?
4. If you had a magic wand to wave, and you could change, add, or remove anything from the experience, what would it be?

# Four Magical Questions

Universal Across All Games and Experiences

1. What was the most frustrating moment or interaction?
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4. If you had a magic wand to wave, and you could change, add, or remove anything from the experience, what would it be?

Frustrating, Favorite, Wanted, Wand

FFWW

# Five Magical Questions

for I Expect You to Die

1. What was the most frustrating moment or interaction?
2. What was your favorite moment or interaction?
3. Was there anything you wanted to do that you couldn't?
4. If you had a magic wand to wave, and you could change, add, or remove anything from the experience, what would it be?
5. When did you feel most clever?

FFWWC



Name	Least favorite moment or interaction?	Favorite moment or interaction?	Anything wanted to do but couldn't?	Magic wand/change anything at all?	When did you feel the most clever?
Josh	n/a	Smooth experience; natural interactions	tried to move projector around	More guns!	figuring out targets in tutorial
Tucker Cox	Getting gassed after shooting window (never turned on car)	Messing with the gus, game physics	Walk out of the car; open the door, leave office, walk around office	Plot twist... like everything is an illusion/a game. Everything is real but fake, play up on this fact	Shooting drawer targets in mid air.
	Had trouble learning the controls (althought he was pretty good still)			Wants motion activated controls (like flipping the switchblade open)	
Jason					
Andrew	Interacting with things while given instructions in car... missed the direction.	Interacting with cigar and other "toy" objects	n/a	n/a	Manipulating objects
David Robins	bomb	getting used to the controls	light the car on fire,tutorial too long	more options to fail	turning around to find the gun
Melissa	Wierd that you don't have a body	Burning stuff	no	n/a	figuring out how to place and shoot targets
Noah		shooting and art style			noticing the gun
Victor	Hard to tell there was gas outside the car; next steps not clear	Using guns and TK	Game forced me to turn around, but not sensors behind me (lost tracking)	Gun shots should be much louder; haptics or audio for "click" of gun when pulling trigger	Setting all the books on fire
Brain	TK hard - dont have to hold stick down once you grab it	completing the level / roll down window to get screwdriver			disarming in reverse, using dynamite in canan
Matt	Dropping things on or around chair before knowing about TK	Using guns and TK	No	Want to see my virtual body in the game	Figuring out opening the lighter
Garret	Learning the controls (most frustrating)	The immersiveness of it all	no	no	Finding the secrets (finding the car key)
Steven	no	Shooting gun and TK	no	Random events or randomizing puzzles (replace bomb with something else, have laser come from side some times... mix it up)	Shooting the laser in the car
Kyle	Hard to use telekinesis	I really liked the gun, how it could go far outa	I wanted a person to come in to shoot	I really liked the gun, how it could go far outa	When I found the key
Joe	leaning the controller is tough		knife on screws	more of a time restriction, like gas slowly leaking into the car through unseald seams	
Franklin	Tutorial stuff, felt like I got the hang of it before tutorial ended	Liked how dumb it made me feel: "oh, I can just do that."	Wanted to use knife as screwdriver	Have Nolan North be the narrator (he's everywhere)?	figuring out rolling up and down window instead of shooting it
Hunter	Not being able to choose level I want	How free it is; do anything i want	No	Being easier to grab stuff, took a few tries to grab things, accidently throw or let go of something	Discovering more items by opening compartments
Dakota	not being able to use knife to unscrew panel; and tutorial is annoying...something about it wasn't right	Everything!	knife as screwdriver, being able to adjust seat leaning back/forward	n/a	Finding the key
Mason	freezing objects was diffult. two different grab buttons	retina scanner		add more elements like the arm bomb card (that are intentionally misleading)	
Alex	freezing things in the air was hard, wanted button on other hand to freeze	gun			finding the disk in the door
Kaed	gas outside of car keeping me from screwdrivers	Stuff catching on fire	Not being able to use knife as screwdriver (didn't really bother him though)	n/a	shooting the laser

# Six Magical Questions

for Lego Brickheadz and many others

1. What was the most frustrating moment or interaction?
2. What was your favorite moment or interaction?
3. Was there anything you wanted to do that you couldn't?
4. If you had a magic wand to wave, and you could change, add, or remove anything from the experience, what would it be?
5. What were you doing in the experience?
6. How would you describe the experience to your friends?

FFWWDD

# Brownbox Playtest Checklist

1 - Brownbox

2 - Script

3 - Questions

4 - Naive Person

Below is a preview of the Brownbox Playtest Checklist form, which is a detailed document used for recording playtest observations and feedback.

The form includes sections for:

- Participant Information (Name, Age, Gender, etc.)
- Session Information (Date, Time, Location, etc.)
- Observations (A detailed section for recording what was seen and heard during the playtest.)
- Questions (A section for recording any questions asked during the playtest.)
- Feedback (A section for recording any feedback received from the participant.)

The form is designed to be filled out by the playtester, providing a structured way to capture all relevant information from the playtest session.

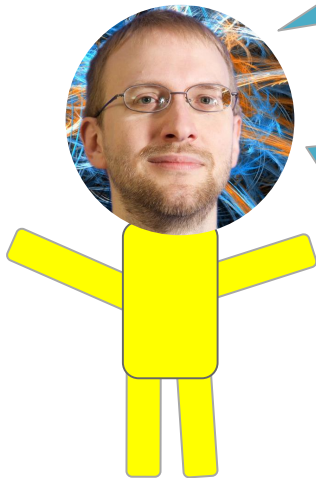
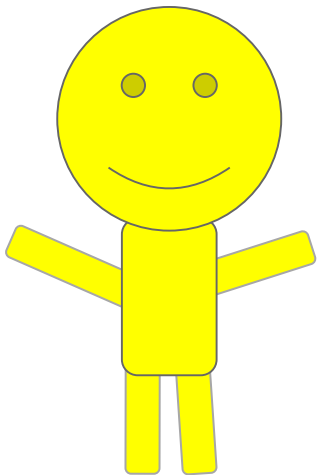


FFWWDD



# Set Guest Expectations for Brownbox

Thanks for coming. This is our brownbox, it will approximate what the final puzzle will be like.



As we progress, feel free to ask me to clarify what you see or what's happening, I'll fill in for anything the brown box lacks. If I don't reply, I'm not being rude, I just want to see what you'll do. And remember, this is a huge help to us, if anything is confusing it's our fault, not yours, but please let us know.

# Brownbox Playtest Checklist

1 - Brownbox

2 - Script

3 - Questions

4 - Naive Person

Below is a preview of the Brownbox Playtest Checklist form, which is divided into sections for the participant, the script, and the questions.

Participant Information			
Name	Age	Gender	Occupation

**Script Information**

Script Name	Script Version	Script Author

**Questions**

Question	Answer
1. What is the purpose of the script?	
2. What is the main goal of the script?	
3. What is the main challenge of the script?	
4. What is the main outcome of the script?	



FFWWDD







# ✓✓ Playtesting VR: Brownboxing, Spycams, and Fuzzy Rugs





# How to Playtest on Phone-Based VR Systems

- Listen to the audio and guess
- Capture locally, play it back later
- Cast it in realtime
- USB-C to HDMI
  - LG V30
  - ZenFone AR
  - Galaxy S8

No Pixel or Pixel 2 support!



# How to Playtest on Phone-Based VR Systems

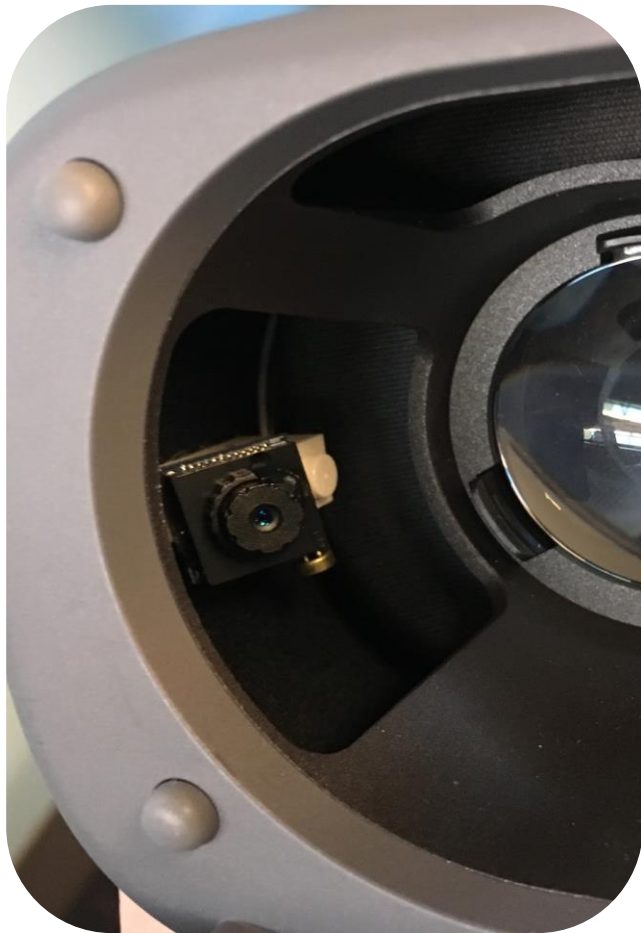
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- ~~USB-C to HDMI~~
  - ~~LG V30~~
  - ~~ZenFone AR~~
  - ~~Galaxy S8~~

























# ✓ Playtesting VR: ✓ Brownboxing, ✓ Spycams, and Fuzzy Rugs









# Take Care Of The Guest





**Before Session Begins****Equipment**

- ☐ Ensure Headset & Lenses are clean before each individual use.

**Establish Comfort**

- ☐ Query user about familiarity with VR
- ☐ Show unfamiliar equipment & describe function
- ☐ Establish your position relative to them in the real world
- ☐ Describe what tester will be able to see (Rift) or not (Gear)
- ☐ Verify Calibration, if possible
- ☐ Assist player with donning
  - a. headset
    - ☐ consider glasses - needed? Help get them into headset if so.
  - b. controller(s)
  - c. Headphones
  - d. Settle Umbilicus if applicable
- ☐ Assist with calibration if needed

**During Playtest****Spatial Manners**

- ☐ Avoid side conversations - talking over player is rude.
- ☐ Let player know if you're changing position or swapping hosts out
- ☐ Avoid laughing at player's actions - they can't see your friendly faces and may not know you're with them.
- ☐ Check in verbally with player so they know you're still there and invested.

**System Specific**

- ☐ You can't always tell if they enter in-headset menus, so warn them what they look like (dimmed world, can't interact, etc... ahead of time).
- ☐ Help players understand if Rift is losing tracking & how to avoid.
- ☐ Assist VIVE players with umbilicus - don't let them trip themselves!
- ☐ Use Daydream with camera cables and TV or computer to see what they see

**Ending the playtest****Equipment**

- ☐ Assist with removal of
  - ☐ controller(s)
  - ☐ headset
  - ☐ Headphones
- ☐ Ensure players have time to transition to real world.
  - ☐ Warn them it may happen so they are not freaked out if it does.
  - ☐ Describe simsick symptoms, advise drink water, fresh air, eschew screens for a bit



Reddit User : "Goofiest thing I ever saw, just face first into the corner of the coffee table, reaching for something in I Expect You To Die. Fortunately she's ok, and the headset still seems to work..."



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# Before Session Begins

## Equipment

- ❑ Ensure Headset & Lenses are clean before each individual use.



## **Establish Comfort**

- ☐ Query user about familiarity with VR
- ☐ Show unfamiliar equipment & describe function



- ❑ You can't always tell if they enter in-headset menus, so warn them what they look like (dimmed world, can't interact, etc... ahead of time).

## **During Playtest**

### **Spatial Manners**

- ☐ Avoid side conversations - talking over player is rude.

# Playtests Boost Morale and Motivation

- See your hard work in the game
- See people enjoying the game
- Find the issues to tighten focus
- Find blockers, clarify any pivots
- Make the next playtest awesome





# ✓ Playtesting VR: ✓ Brownboxing, ✓ Spycams, and ✓ Fuzzy Rugs





- VR is still new
  - Playtesting is Critical
  - Brownboxing = Rapid Physical Prototyping
  - Ask and Track the Right Questions
- FFWWDD
- Spycams for phone-based playtesting
  - Take Care of the Guest









# Thanks! Questions?

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Slides : [www.shawnpatton.com](http://www.shawnpatton.com)

Please Practice your FFWW in the GDC feedback email!





## Supplies:

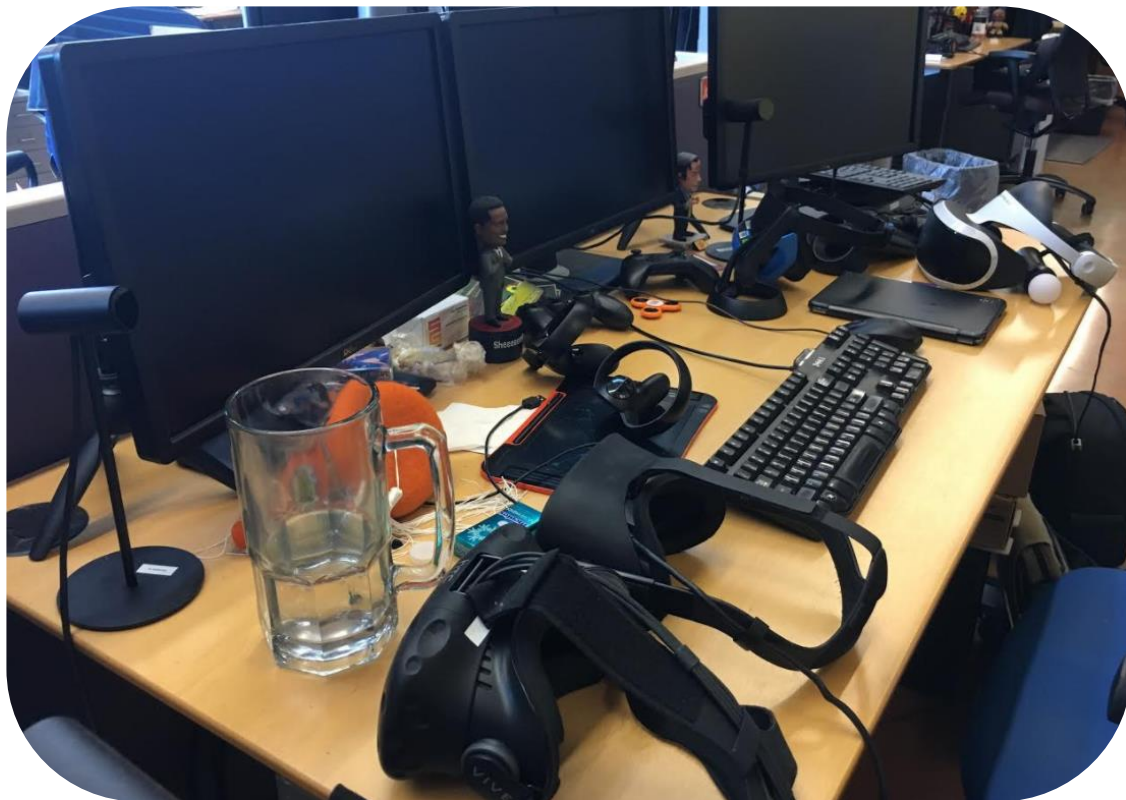
- Spycams : Search ebay for “spy cam wired micro”
- Hot Glue Gun : This one has an on/off switch!

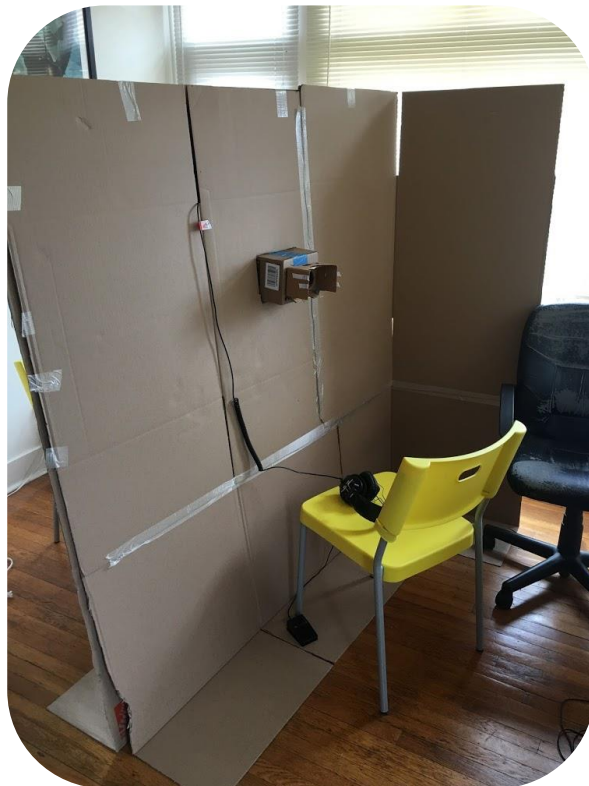
<http://a.co/b7fEUyl>

- Zeiss Cleaning Wipes

<http://a.co/icbgBuo>









# A New Organ Has Just Been Discovered Inside The Human Body

The newly classified organ, the mesentery, had been hiding in plain sight in our digestive systems for more than 100 years.

