GDC

To Err is to Play. Human Error and Game Design

Ben Lewis-Evans
UX Researcher, Epic Games

GAME DEVELOPERS CONFERENCE® | MARCH 19–23, 2018 | EXPO: MARCH 21–23, 2018 #GDC18

EPIC USER EXPERIENCE

UBM

Me

Lead User Experience Researcher at Epic Games, PhD in Psychology, & Kiwi

ben.lewisevans@epicgames.com

@ikbenben

[EPIC] Gortag

LaglGortag

Gortag

Gortag42

Error

“The failure of planned actions to achieve their desired goal without some unforeseen or chance intervention.”

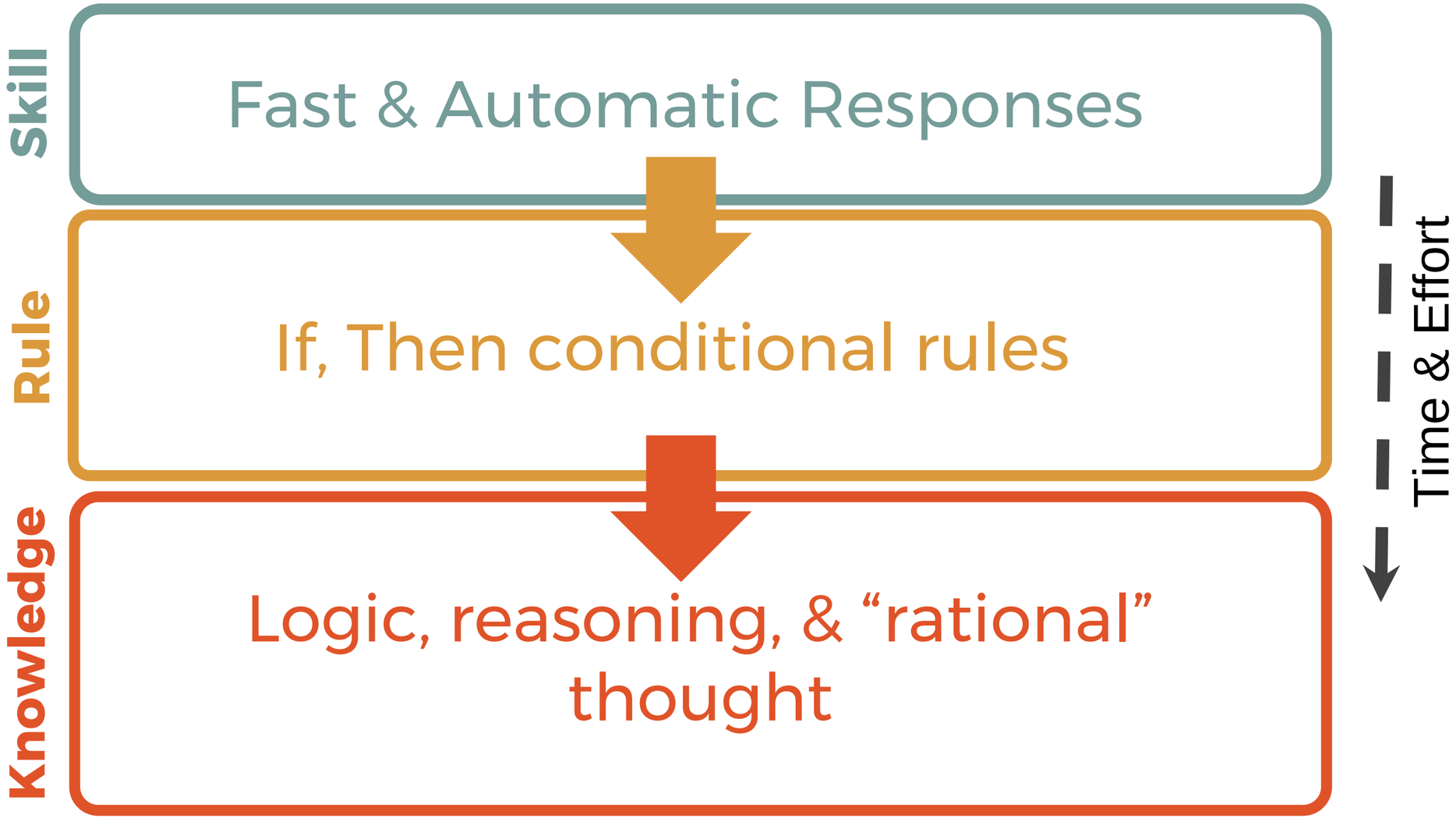
- **Reason, 1990**

Error

“Things going wrong that you don’t want to go wrong”

– **Me, just now**

The Study of Error


Skill
Fast & Automatic Responses
Rule
If, Then conditional rules
Knowledge
Logic, reasoning, & “rational” thought
Time & Effort

GDC

Errors, how to Prevent and Use them

Ben Lewis-Evans
UX Researcher, Epic Games

GAME DEVELOPERS CONFERENCE® | MARCH 19–23, 2018 | EXPO: MARCH 21–23, 2018 #GDC18

EPIC USER EXPERIENCE

UBM

SKILL LEVEL ERRORS

Inattention vs Overattention

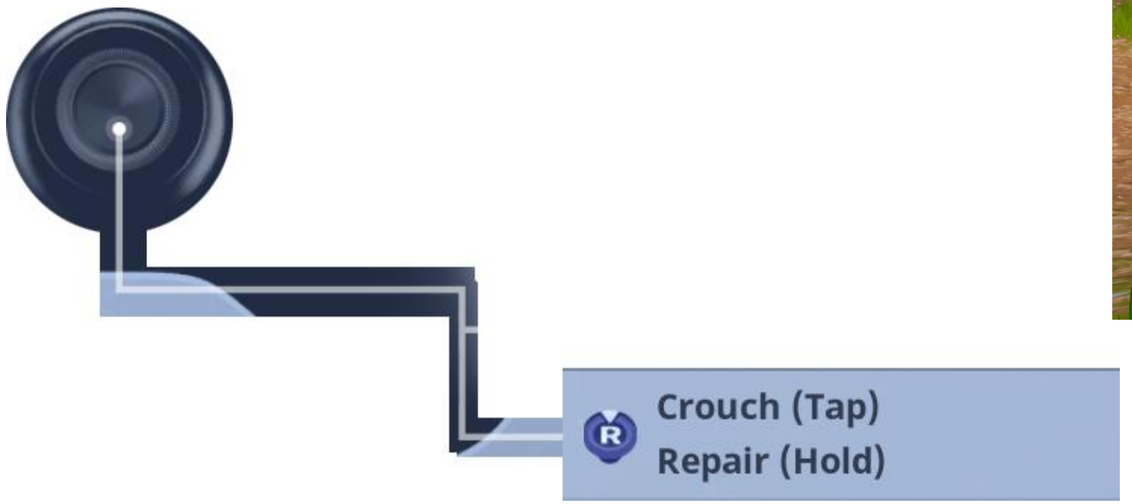
One Must Fall: 2097

Double-capture Slips

Automation capture due to distraction/load

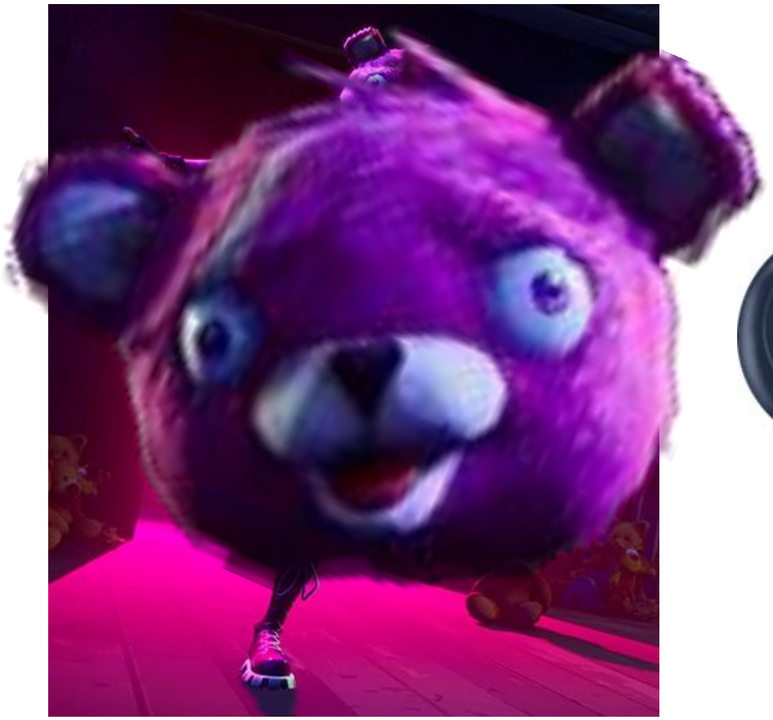
Double-capture Slips

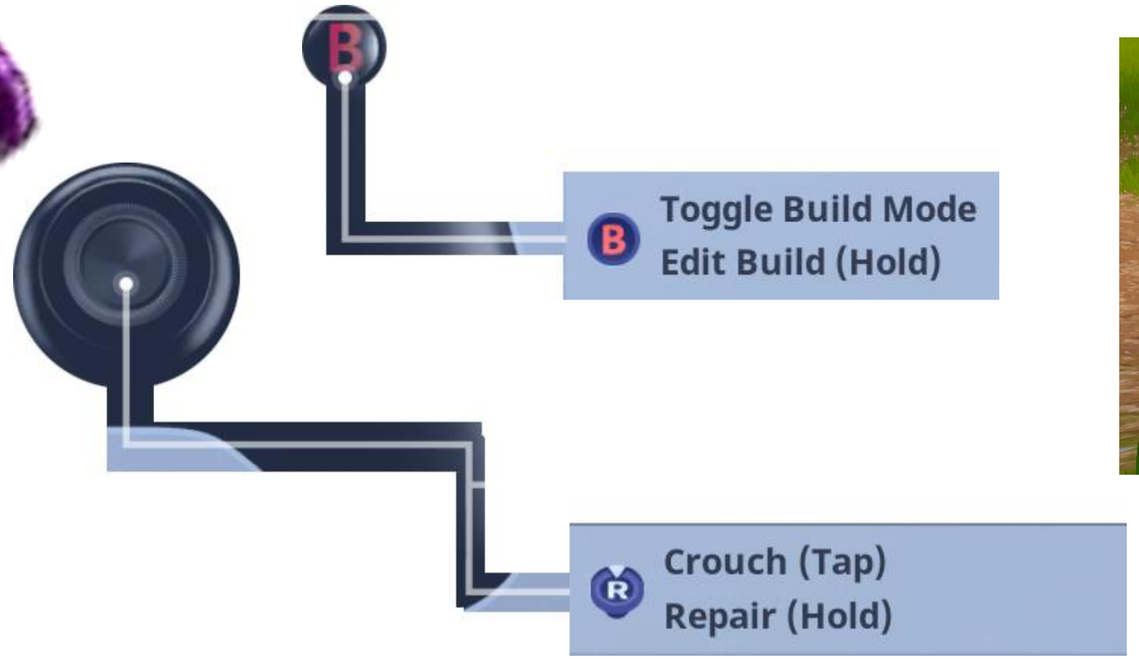
Automation capture due to distraction/load



Double-capture Slips

Automation capture due to distraction/load





Double-capture Slips

Automation capture due to distraction/load

Prevent Double-capture Slips:

Standardization

Consistency

Customization

Skill | Inattention | Prevent Double-capture Slips | A to Jump, B to Double-capture Slip

Inattention

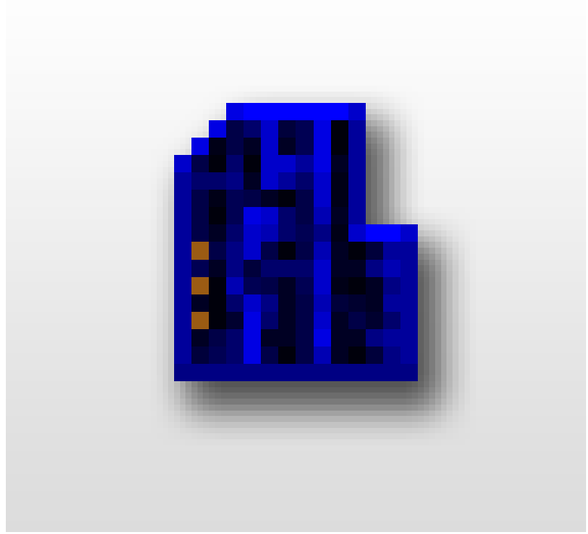
Use Double-capture Slips:

Dead Space

Rock Band 4

Omissions Following Interruptions

The walking out of your house/Martian Outpost without your keys problem.



DOOM

Prevent Omissions Following Interruptions:

Animal Crossing

"Are you sure" prompts

In-world reminders

?

WoW

Delay Reducing Control

Environmental capture detaching intent

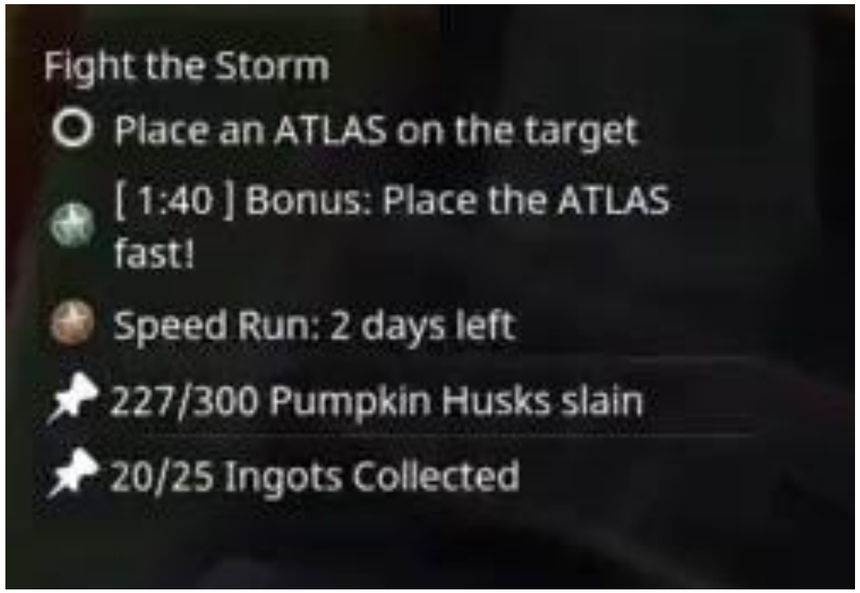
(aka the thing that prompted you to get the other thing is gone)

Skyrim

Prevent Delay Reducing Control:

Assassin's Creed: Revelations

Portable cues and in-world affordances



Fortnite

Use Delay Reducing Control:

Space tasks out

No reminders of action

Discworld

Perceptual Confusion

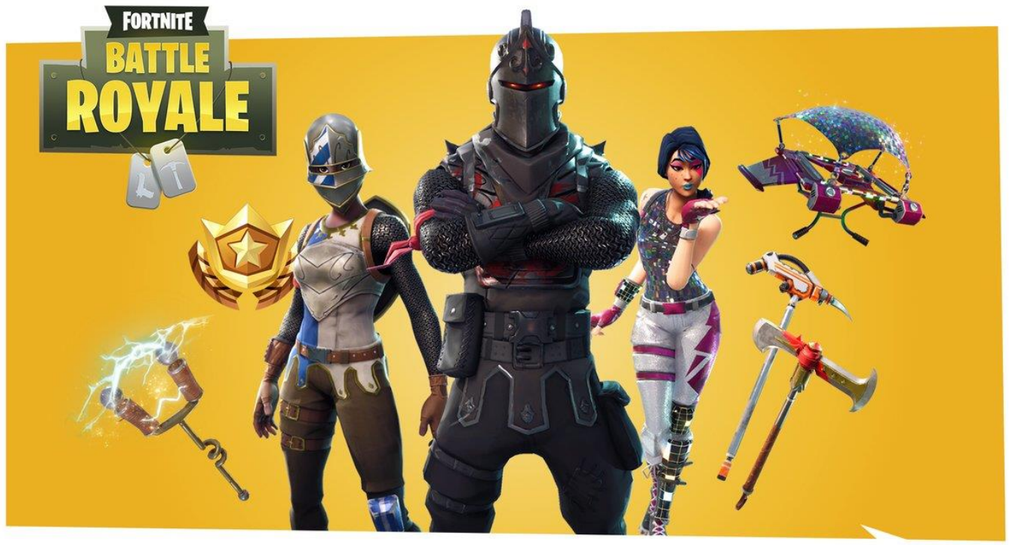
Battlefield 4

This thing looks like that thing

Prevent Perceptual Confusion

Distinct shapes, silhouettes, colors & animation

Highlights



Fortnite

Paragon

Use Perceptual Confusion:

Add load

Spot the difference

Spies and ambush enemies

Marathon

Interference Error

Two thoughts/actions enter, a horrible combination emerges

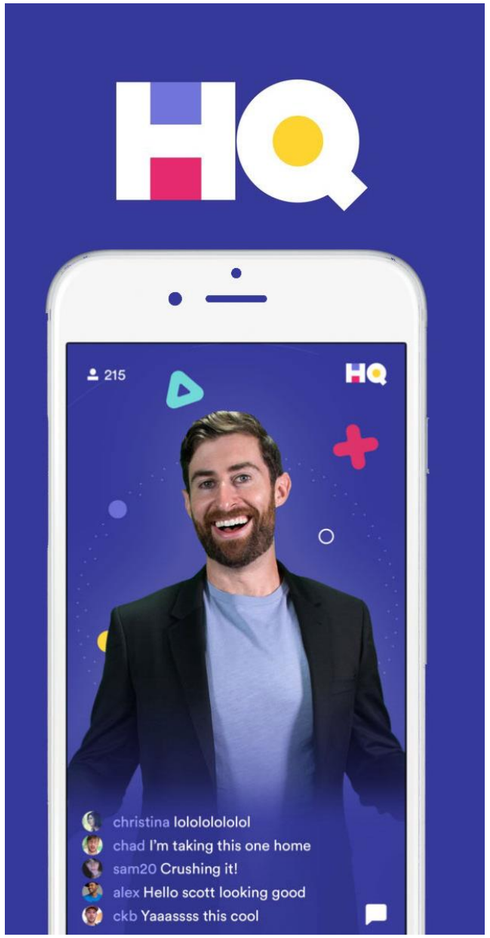
“Freudian slips”

Prevent Interference Error:

Low task load and/or only one choice/task.

Fortnite

Use Interference Error:



HQ

Rock Band 4

Similarity

High task load

Overattention

Omission

Repetition

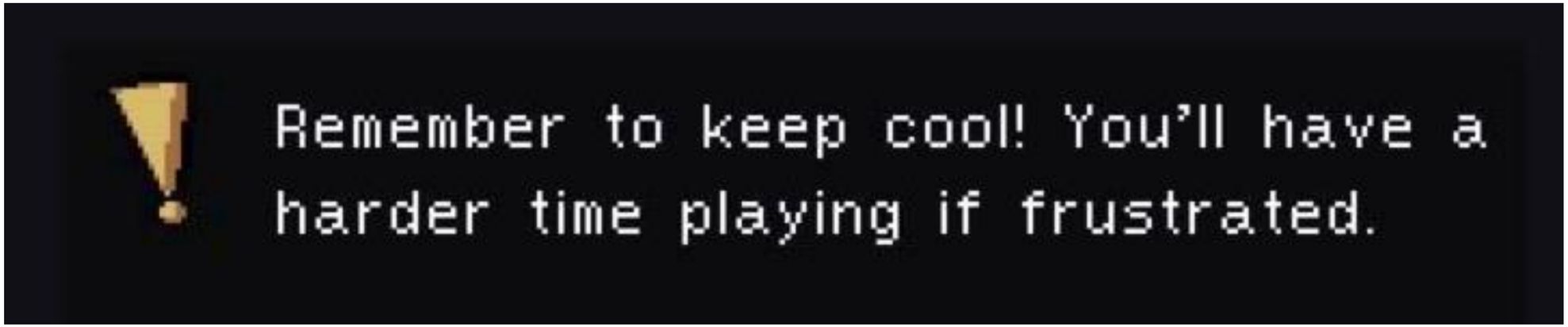
Reversal

Prevent Overattention:

Onboarding ramp

Flow

Skips?



Dead Bolt

Use Overattention:

Metal Gear Solid V

Point out obvious failings

Tell them to try harder

Add Time pressure

God of War 3

RULE LEVEL ERRORS

Dragon Age 2

Good Rules and Bad Rules

Some rules are good, but get misapplied or don't cover all situations

Some rules are bad…

First Exceptions

I didn’t know that happened…

Langewieche’s Law:

“Everything that can **go wrong** usually **goes right**…”

Prevent First Exceptions

Dark Souls

No exceptions!

Standard and consistent rules

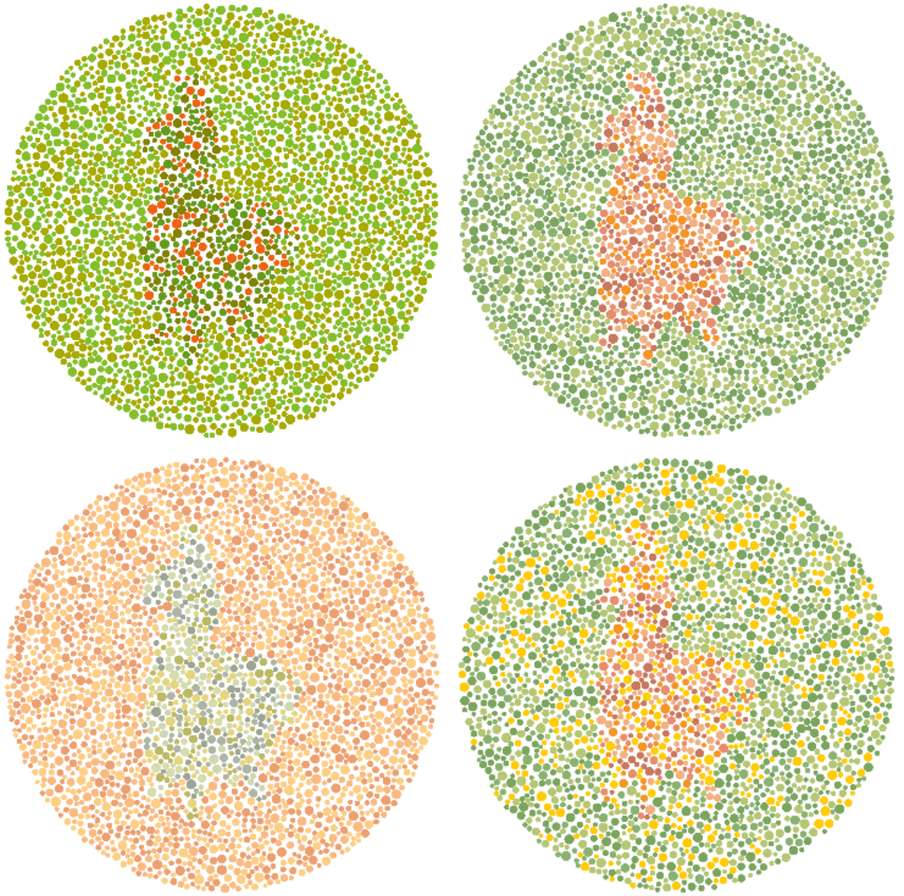
Use First Exceptions

All the exceptions! (at least some…)

Destiny

Countersigns, Nosigns, & Information Overload

Signal detection: Go, no-go, or noise?



Fortnite

Prevent Countersigns, Nosigns, & Information Overload:

World of Tanks

Clear teaching

In-world prompts

Clear separation of elements

Use Countersigns and Nosigns:

Add noise!

Small differences between right and wrong

Doom

Rule Strength, General Rules, & Rigidity

Survival of the strongest

Good enough is good enough

If it ain't broke, don't fix it

Misapplication of good rules

Prevent Rule Strength, General Rules, & Rigidity:

Paragon

Multiple viable paths or only one with clear feedback

Mix up game play

Offer help on failure

Use Rule Strength, General Rules, & Rigidity:

Add exceptions

Understand, and subvert, expectations

Metal Gear Solid V

Redundancy

Fortnite

It wasn't important before, why would it be now?

Prevent Redundancy:

Extra volume on rare information

Information is only shown when needed, or reminded later (cracks in walls with an error)

Avoid redundant information

“Unflowering” Onboarding

Encoding & Action Deficiencies

Lack of or incorrect information

Wrong, inelegant, or inadvisable rules

Lack of consequence/feedback

Fortnite

Prevent Encoding & Action Deficiencies:

Fortnite

- Onboarding
- Clarity of gameplay cues and feedback

KNOWLEDGE LEVEL ERRORS

Divinity Original Sin 2

Workspace Limitations

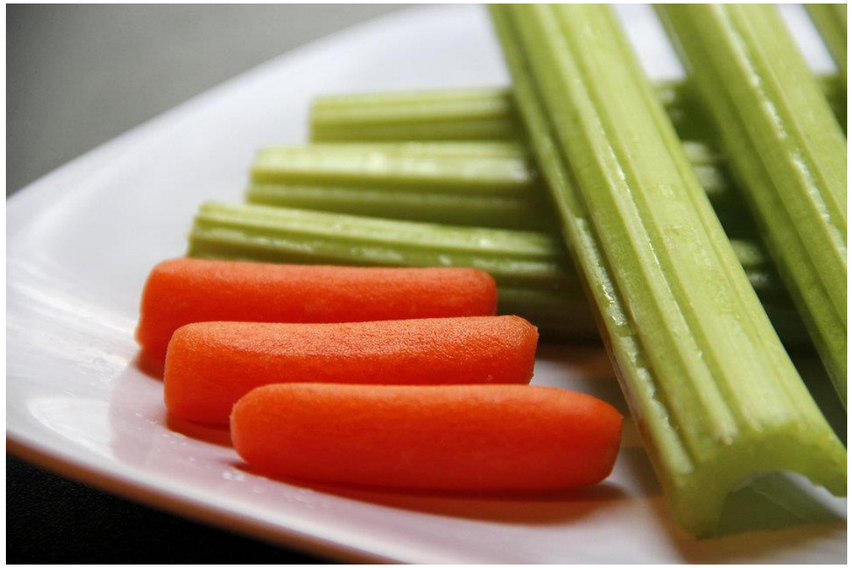
Limited resources

First in-first out

Meta-impact on everything.

Selectivity

Attention to psychologically salient rather than logically important



4
12
223
5

Prevent Selectivity

Fortnite

Make “logical” psychologically salient

Tips

Gameplay cues

Highlighting new information

Use Selectivity:

TRAPS!

Distractors

Fortnite

Out of Sight, Out of Mind

Availability heuristic

To someone with a hammer everything looks like a nail

Halo

Prevent Out of Sight, Out of Mind:

Encourage solution switching

Provide (failure based) hints

Fortnite

Use Out of Sight, Out of Mind

DOOM

Present lots of nail looking problems

Use distractors (e.g. simple solutions, but complex distractors)

Confirmation Bias

Effort towards expectations

WHO WOULD WIN?

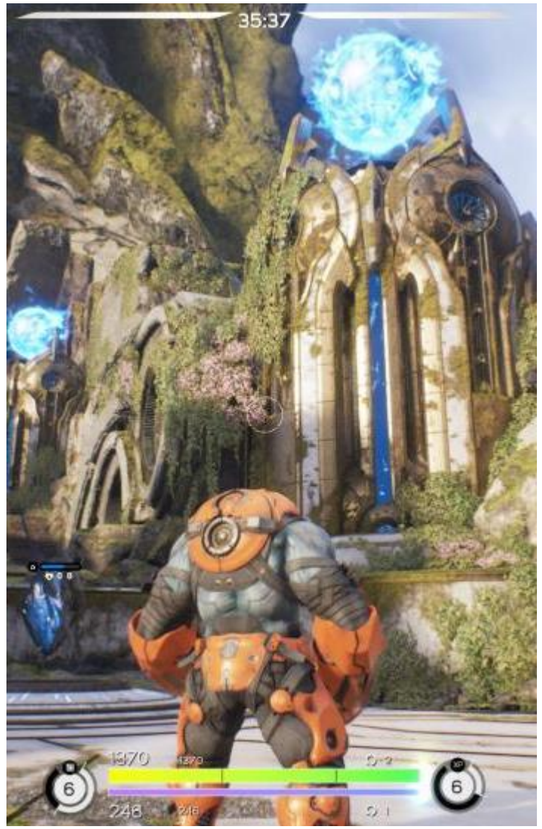
A peaceful place with lot of chests and opportunities.

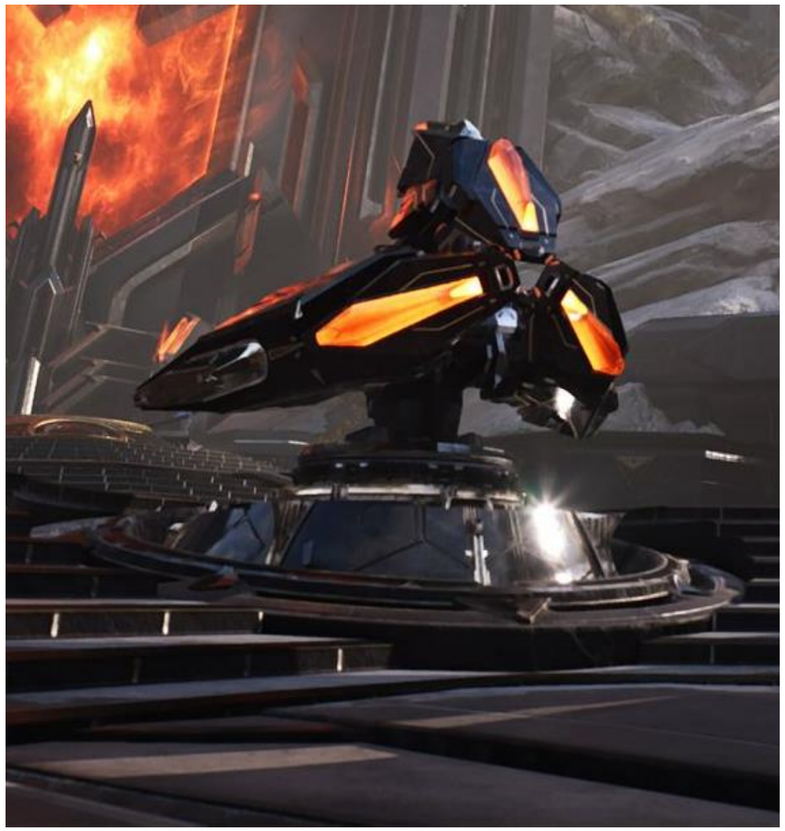
One tilted boi

Prevent Confirmation Bias:

Create and meet player expectations

Strongly present contradictory information





Paragon

Overconfidence

The Last of Us

Disregarding contradictory signs

Natural

Prevent Overconfidence:

Strong contradiction

Forcing functions

Mass Effect

Use Overconfidence:

Dark Souls

Everyday game design relies on this

Support player growth and improvement

Biased Reviewing

“I have thought of everything I can think of to think of! Check!”

Prevent Biased Reviewing:

Provide accurate check off lists

WoW

Use Biased Reviewing:

Shadow of Mordor

Don’t provide progression logs…

Leave information out/change things up

Halo Effects

Good attributes in one area rub off to others

Prevent Halo Effects:

Subvert and challenge expectations

WoW

Use Halo Effects:

Wolfenstein II: The New Colossus

Make Good characters look good

Make Evil characters look evil

Problems With Causality

Underestimating future irregularities

Representativeness heuristic

Illusion of control

Correlation is not causation

Hindsight bias

Prevent Problems with Causality:

Feedback

Expectation matching

Power growth mapping systems

Fortnite

Use Problems with Causality:

Bejeweled Stars

Give players control and feedback

Problems With Complexity

Delayed feedback

Thinking in causal series

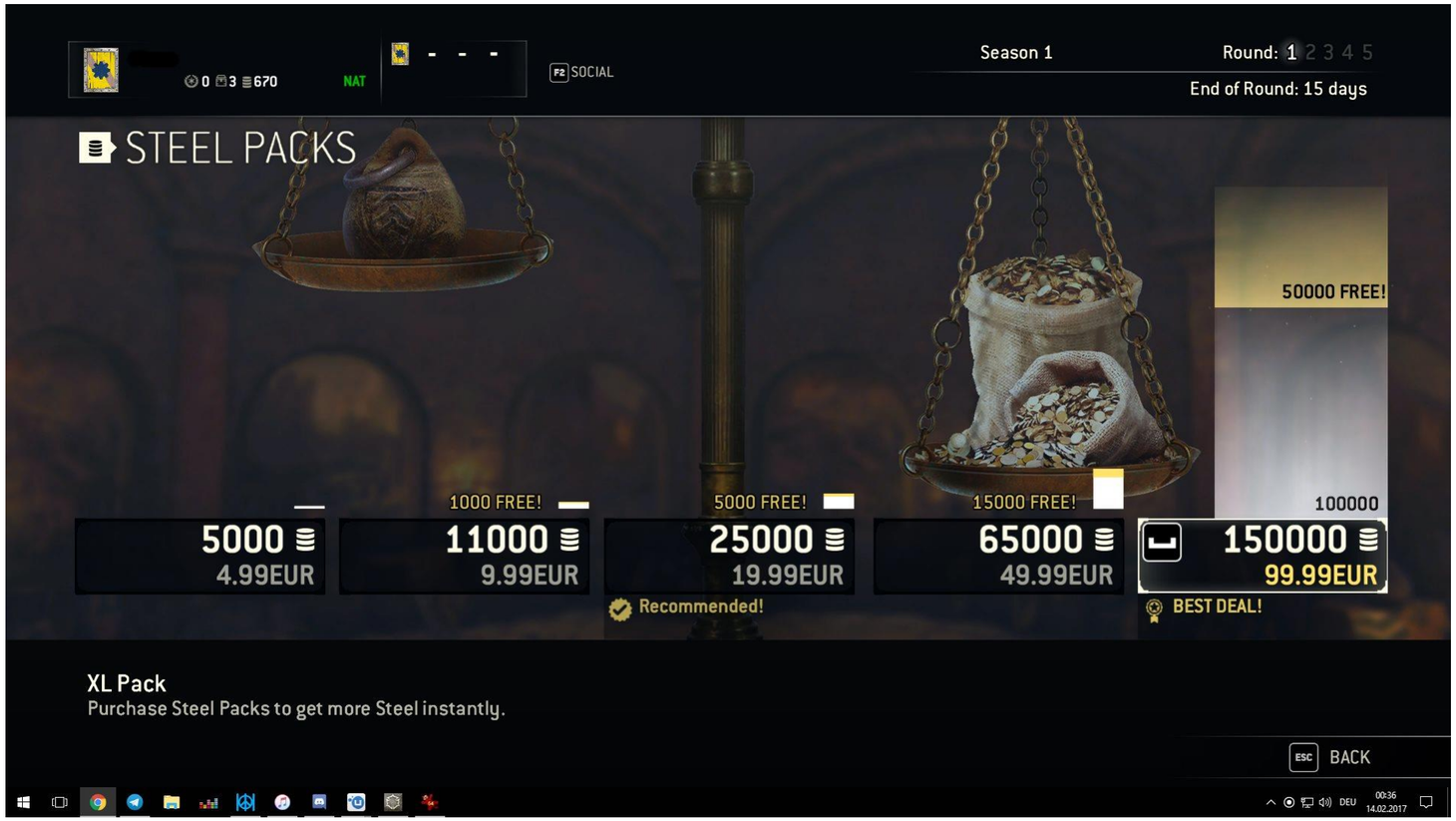
Difficulties with exponentials

Prevent Problems with Complexity:

Feedback

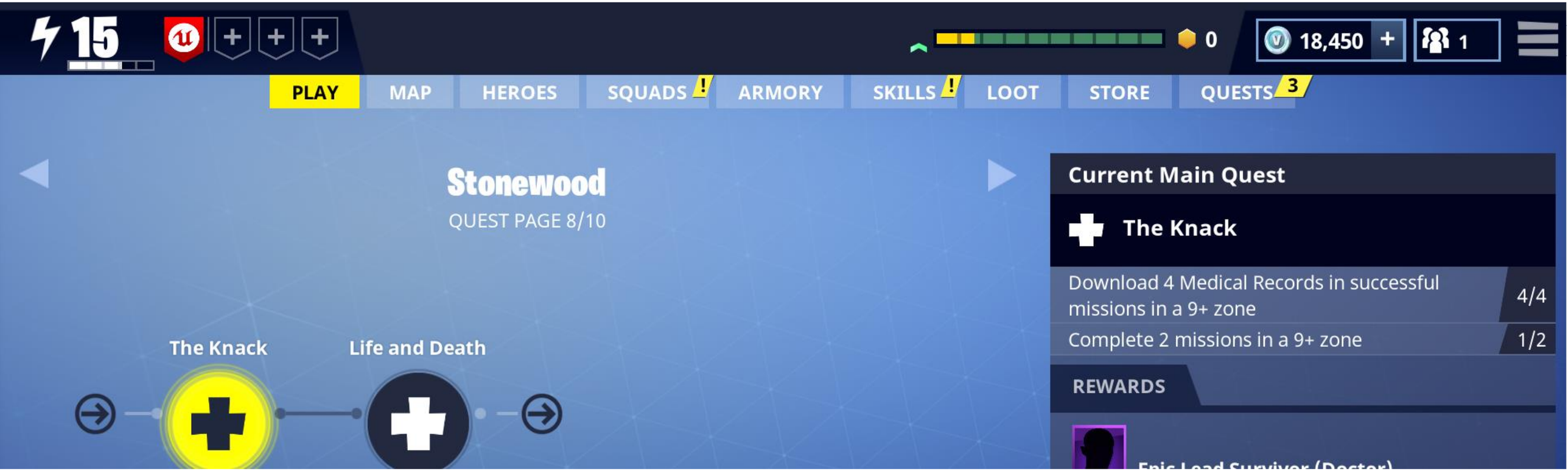
Visualization

Clarity



For Honor

SYSTEMS VIEW



Fortnite

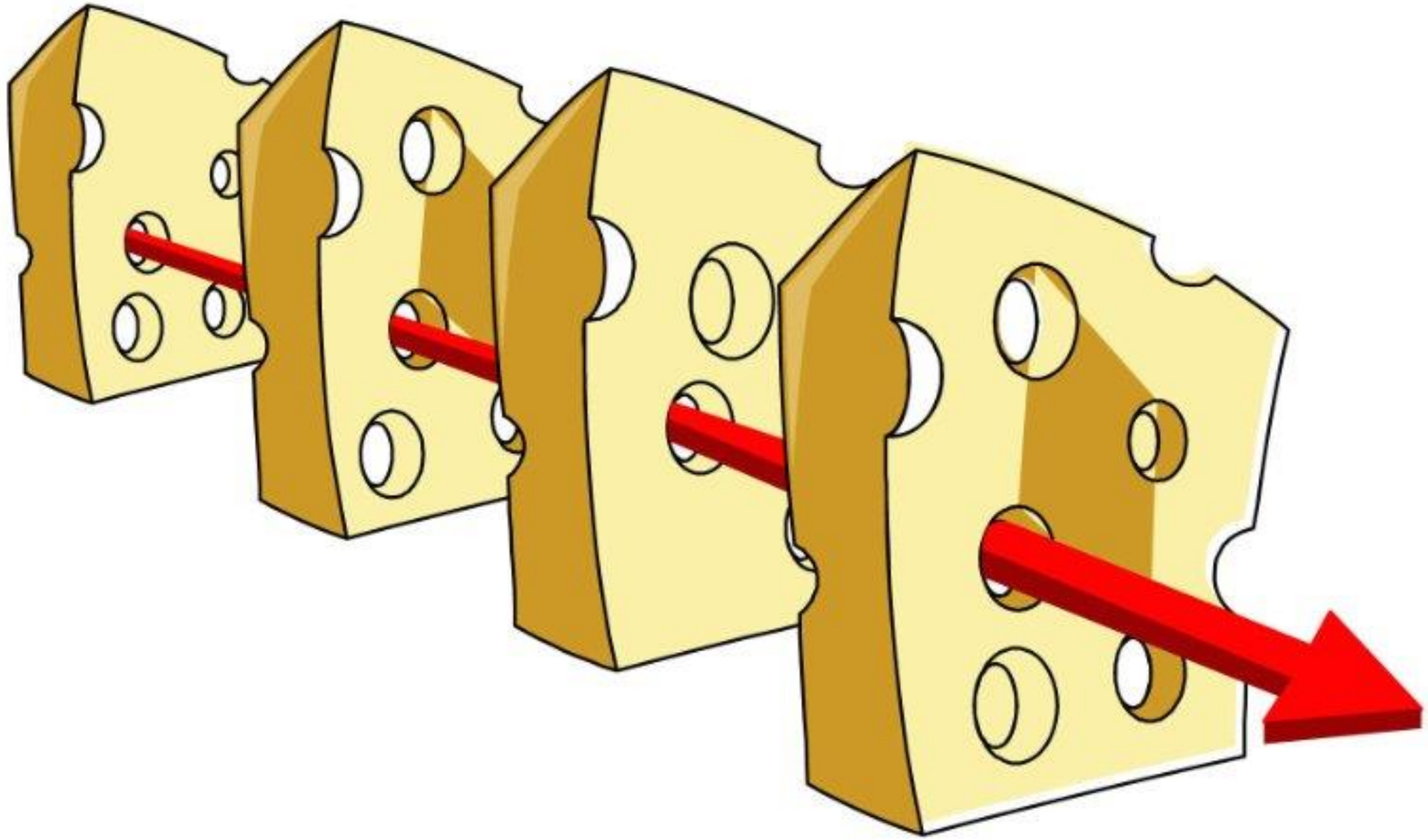
“Safety” Culture vs “Blame” Culture

Error is caused by interactions within systems.

Look to systems for answers, don’t look for individuals to blame.

Blame stagnates. Instead, learn, improve, & innovate.

Swiss Cheese



A Systems View on Players

Usability

Positive and negative **systems** result in outcomes, not “the player was confused”

It is not “git gud”

A Systems View on Workplaces

Blame hides systemic issues and reduces reporting

Learn from mistakes and address systems. Don’t stop at the person.

SUMMARY

Summary

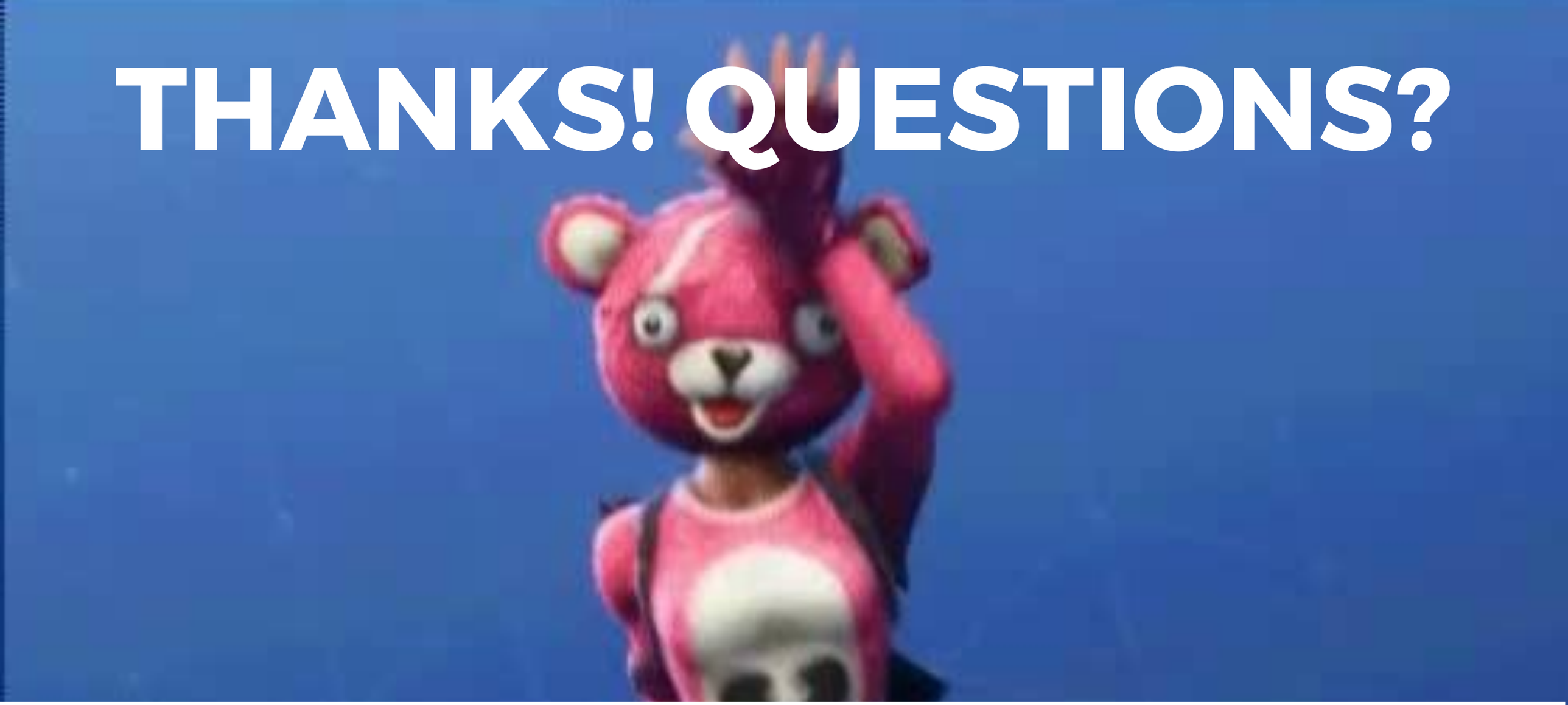
All humans make errors

Errors are what makes human behavior interesting, unpredictable… fun!

Learn to embrace fun error and prevent unintended error.

Look to systems, not individuals.

THANKS! QUESTIONS?



@ikbenben [EPIC] Gortag Gortag LaglGortag Gortag42

GDC #GDC18

ben.lewisevans@epicgames.com

EPIC USER EXPERIENCE UBM