Boss Up
Boss Battle Design Fundamentals and Retrospective
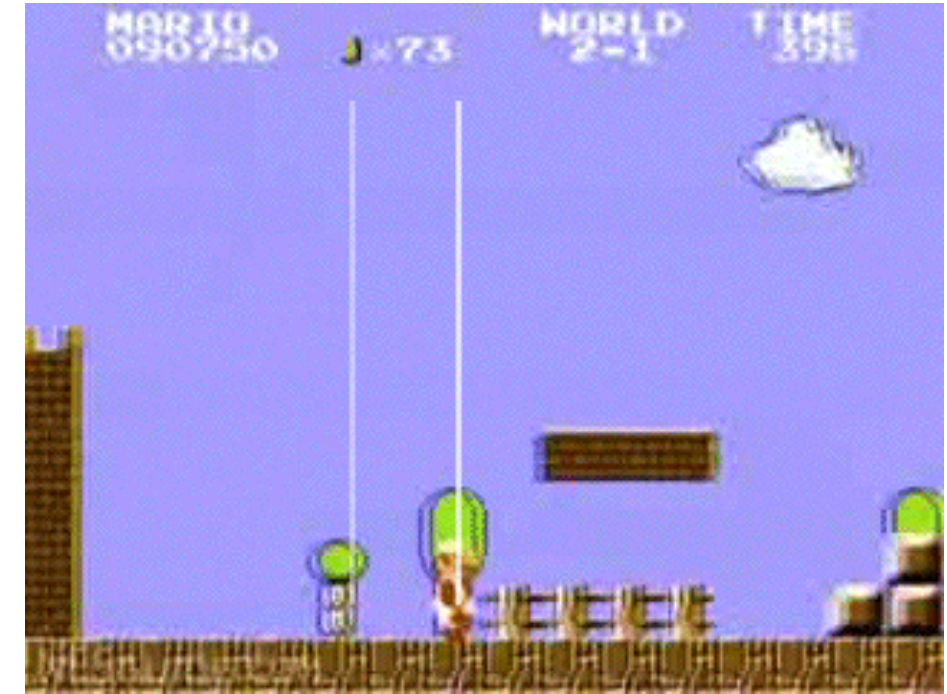
Itay Keren
🐦 itayke

MUSHROOM 11

Itay Keren
itayke

Scroll-Back

The Theory and Practice of
Cameras in Side-Scrollers

Itay Keren
itayke

Game Boss

/gām bäs/

A significant[*]computer-controlled[†]enemy[‡]who must[§] be defeated[||]to achieve a goal[¶]or continue progress[#]

Game Boss

/gām bäs/

An epic confrontation that serves as a microcosm of your game, while temporarily breaking its rules

Purpose

Reward
Take a break from normal gameplay and reward player's persistence with a new experience and a chance at a major triumph

Dazzle
Surprise the player with an unexpected play experience

Engage
Use the battle to advance the story and create an emotional attachment

Challenge
Test acquired skills and introduce new ones in preparation for what's next

Shock & Awe

Dazzle the players with an unexpected confrontation
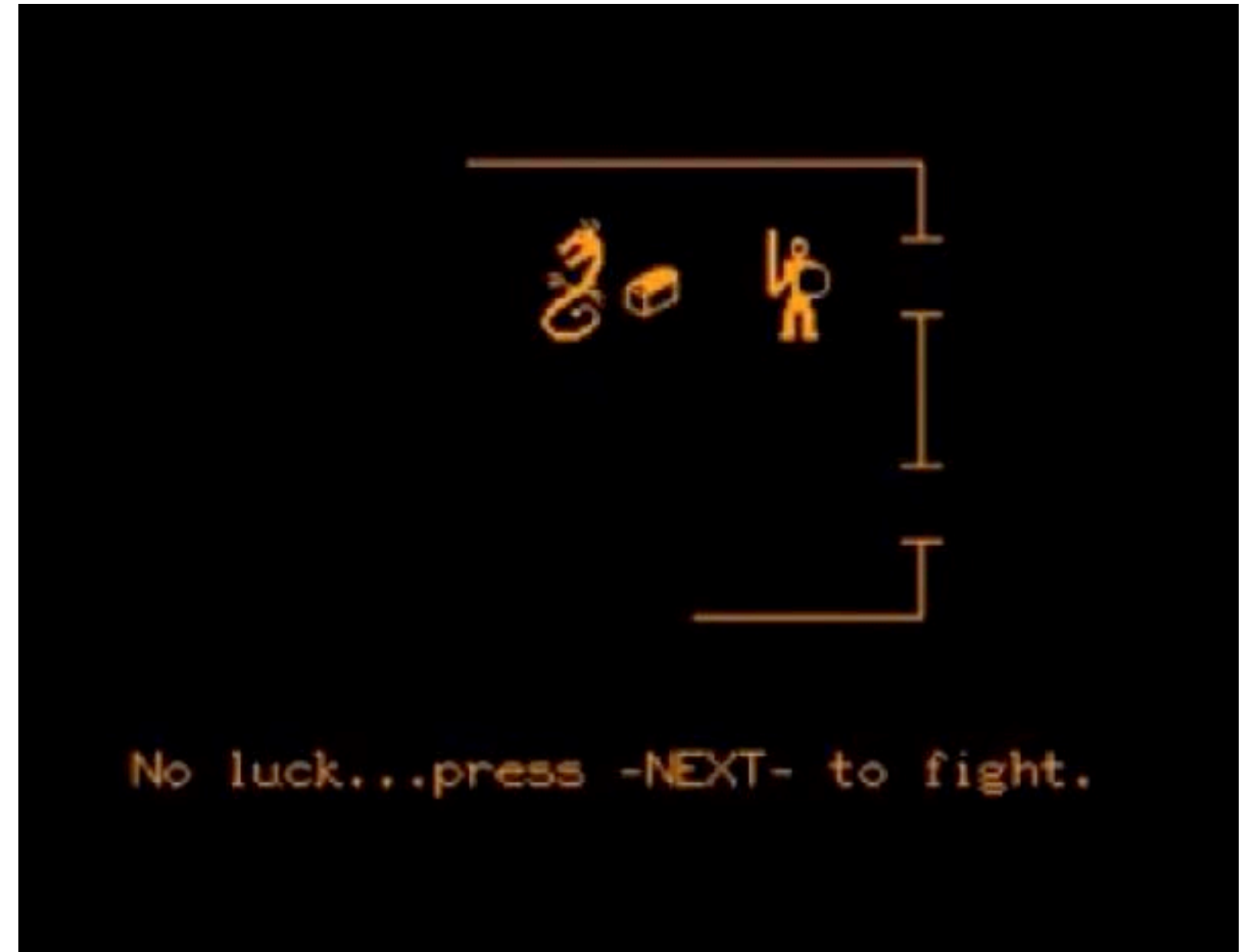
Create a lasting first impression

Powerful

Unexpected strength

Against all odds, David & Goliath

The Dragon
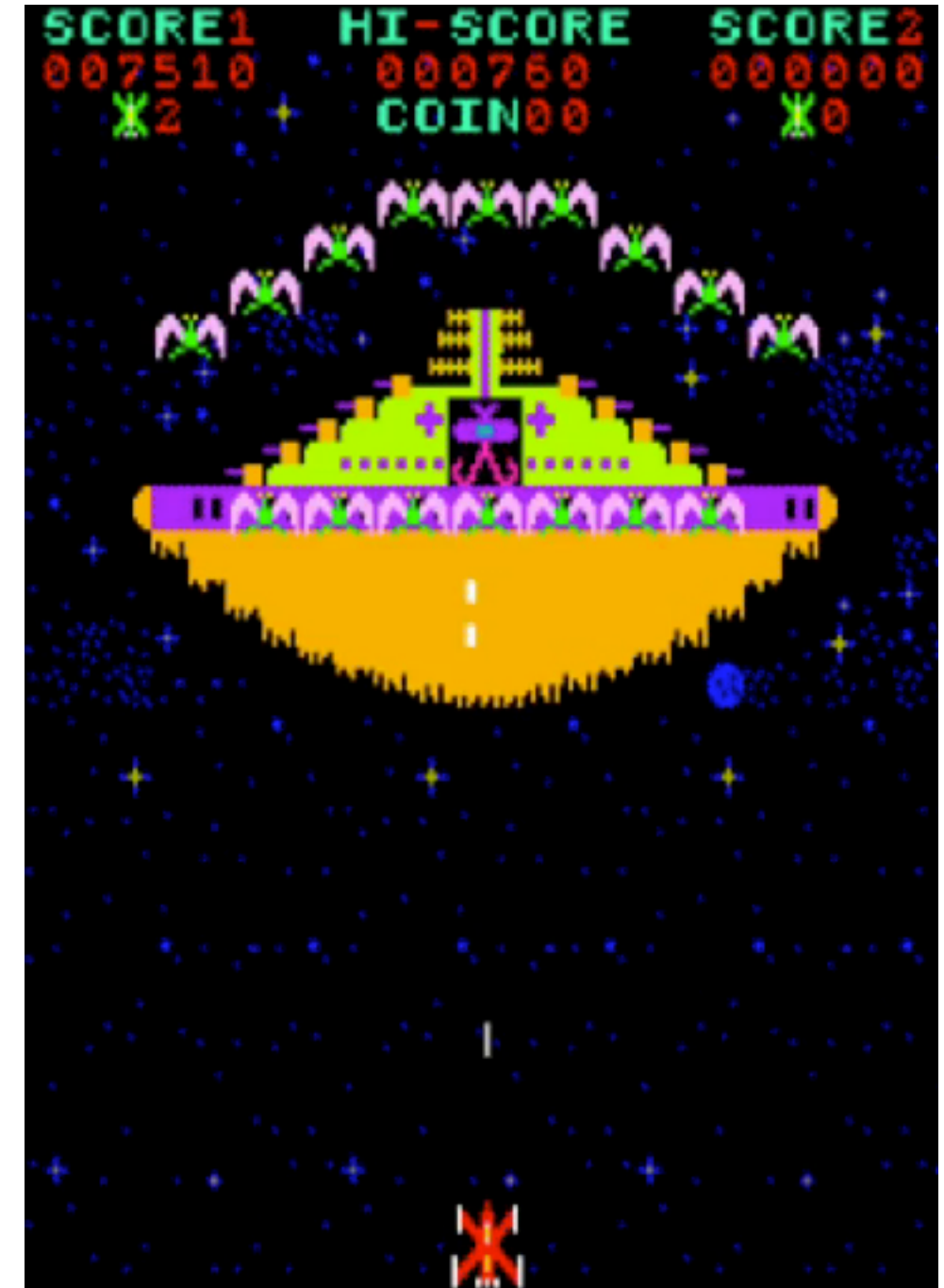Pedit5/The Dungeon © 1975 Rusty Rutherford

Large

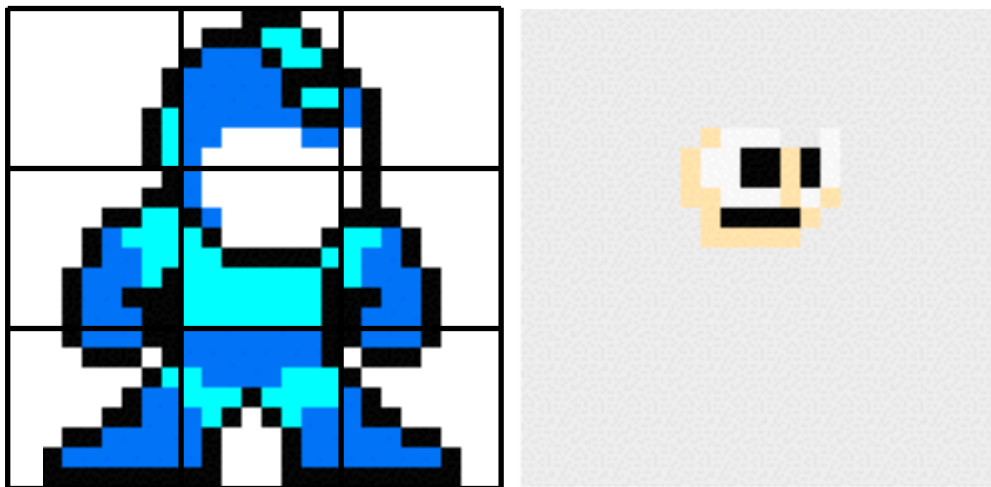## Seemingly Invincible

Size is power

Mothership
Phoenix © 1980 Centuri (Taito)

Large

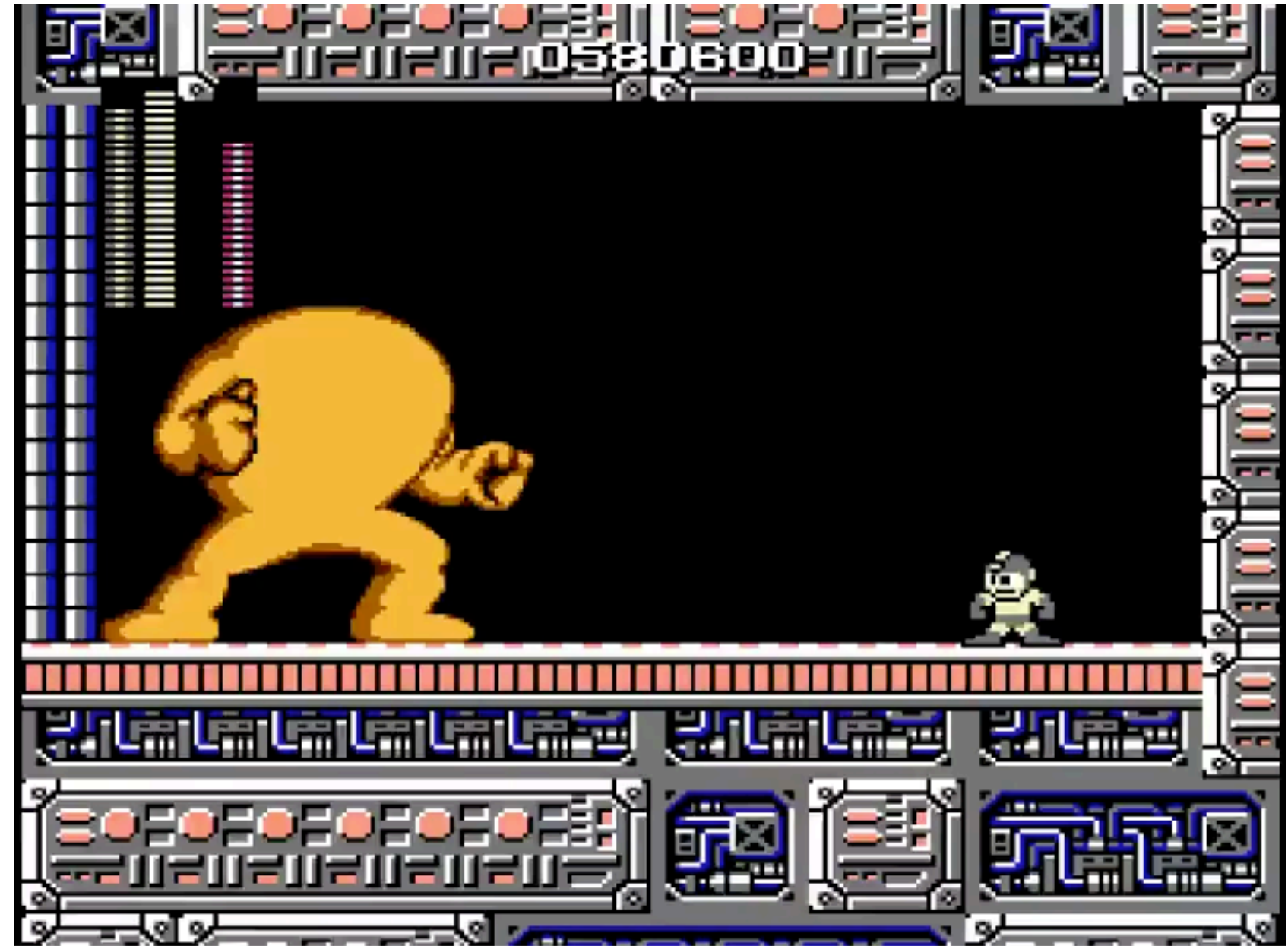## Tech in service of design

64 foreground sprites

All 8x8 or all 8x16

3 colors (out of 56) + transparent

No more than 8 sprites per scan line

Yellow Devil
Mega Man © 1987 Capcom

Large

Tech in service of design

Malus
Shadow of the Colossus © 2005 Team Ice (SCE)

Large

Continuously surprise the player

Rules changed during battle

Boss is a level

Cronos
God of War 3 © 2010 SCE Santa Monica Studio

Large

Rules changed during battle

Gongen Wyzen
Asura's Wrath © 2012 CyberConnect2 (Capcom)

Unexpected

Surprise with theme, tech, visuals & mechanics

Sinistar
Sinistar © 1982 Williams Electronics

Unexpected

Terror

Asphyxia
Silent Hill: Homecoming © 2008 Double Helix Games (Konami)

Unexpected

Humor

The Great Mighty Poo
Conker's Bad Fur Day © 2001 Rare (Nintendo)

Unexpected

Unlikely genre

Eyerok
Mario Kart DS © 2005 Nintendo

Engage

Use gameplay pause to tell a story

Build anticipation towards the battle

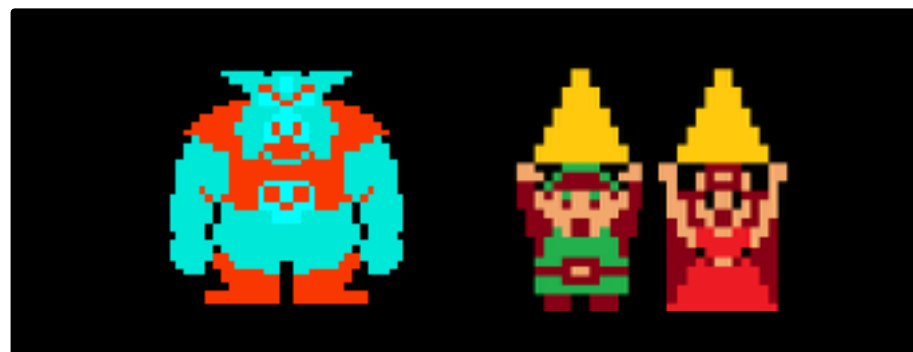Revel in its outcome

Storytelling

Traditional story frame

Donkey Kong
Donkey Kong © 1981 Nintendo

Storytelling

Narrative progression with cutscenes

Foreshadowing

Create anticipation & engagement

Akuma
Karateka © 1984 Jordan Mechner

Storytelling

Advancing the plot with playable cutscenes

Alternate play rules

Epic intro

Joker
Batman: Arkham Knight © 2015 Rocksteady (Warner Bros.)

Intro

Build anticipation for battle

Silence before the storm

Valus
Shadow of the Colossus © 2005 Team Ice (SCE)

Intro

Advance the narrative

Build rage

Bob Barbas
DmC: Devil May Cry © 2013 Ninja Theory (Capcom)

Intro

Break gameplay rules

Challenge boundaries

Throw player off balance

Scarecrow
Batman: Arkham Asylum © 2009 Rocksteady (Warner Bros.)

Intro

Break gameplay rules

Challenge boundaries

Throw player off balance

Engage player in preparation for the battle

Psycho Mantis
Metal Gear Solid © 1998 Konami

Outro

Break after intense battle

Relish and gloat

Advance the story

Poseidon
God of War 3 © 2010 SCE Santa Monica Studio

Outro

Relish and gloat

KILLCAM

Word Mark	KILLCAM
Goods and Services	IC 009. US 021 023 026 036 038. G & S: computer game software. FIRST USE: 20031029. FIRST USE IN COMMERCE: 20031029
Standard Characters Claimed	
Mark Drawing Code	(4) STANDARD CHARACTER MARK
Serial Number	77159081
Filing Date	April 17, 2007
Current Basis	1A
Original Filing Basis	1A
Published for Opposition	March 4, 2008
Registration Number	3429702
Registration Date	May 20, 2008
Owner	(REGISTRANT) Activision Publishing, Inc. CORPORATION DELAWARE 3100 Ocean Park Boulevard Santa Monica CALIFORNIA 90405
Attorney of Record	Neil Yang
Type of Mark	TRADEMARK
Register	PRINCIPAL
Affidavit Text	SECT 15. SECT 8 (6-YR). SECTION 8(10-YR) 20171103.
Renewal	1ST RENEWAL 20171103
Live/Dead Indicator	LIVE

DEATH CAM

Word Mark	DEATH CAM
Goods and Services	IC 009. US 021 023 026 0
Standard Characters Claimed	
Mark Drawing Code	(4) STANDARD CHARAC
Serial Number	87731800
Filing Date	December 22, 2017
Current Basis	1B
Original Filing Basis	1B
Owner	(APPLICANT) PUBG Corporation
Attorney of Record	Corey K. Cho
Type of Mark	TRADEMARK
Register	PRINCIPAL
Live/Dead Indicator	LIVE

Wolfenstein 3D © 1992 id Software

Battle Setup

Fit boss to its environment & vice versa

Battle timing & post-battle results

Boss sequencing and interconnection

Timing

Level boss

Increased anticipation

3rd Floor
Kung-Fu Master / Spartan X © 1984 Irem (Nintendo)

Timing

Ending boss

Single, unexpected encounter

Grumple Grommit
Bubble Bobble © 1986 Taito

Timing

Intro boss

Start with a bang

The Chain
Furi © 2016 The Game Bakers

Timing

Unexpected timing →

Lingering anticipation & engagement

Nemesis
Resident Evil 3: Nemesis © 1999 Capcom

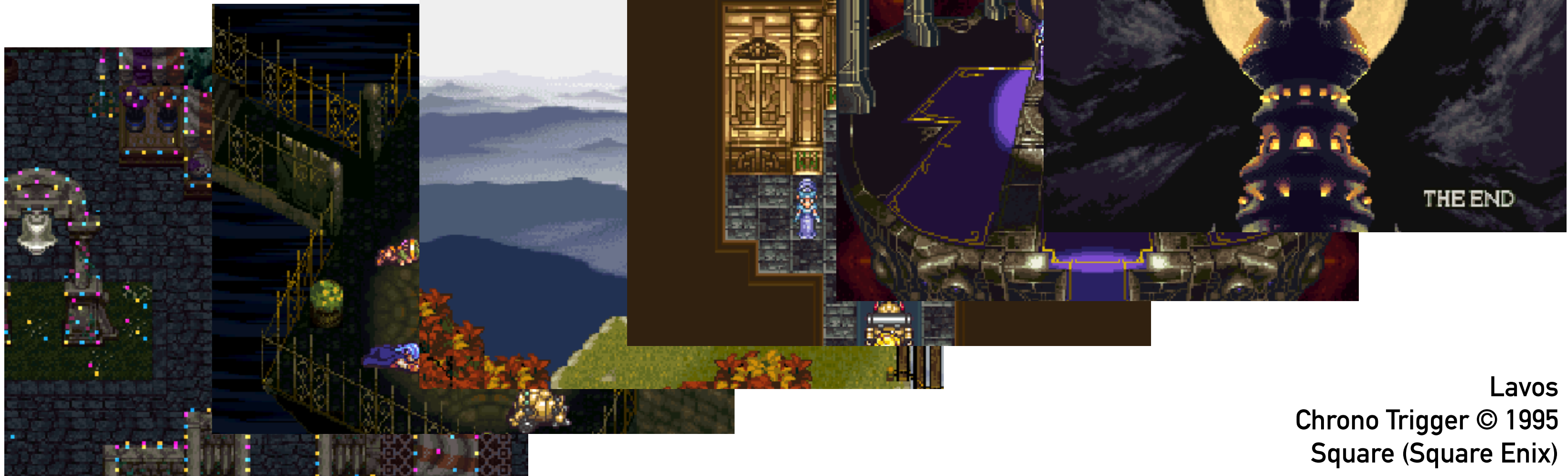# Timing

Choice of timing

Meaningful results

Big Daddy
BioShock © 2007 2K Games

Timing

Choice of timing

Meaningful results

Lavos
Chrono Trigger © 1995
Square (Square Enix)

Locally Sourced

Connect boss to its environment, and vice versa

Psycho Mantis
Metal Gear Solid © 1998 Konami

Locally Sourced

Connect boss to its environment,
and vice versa

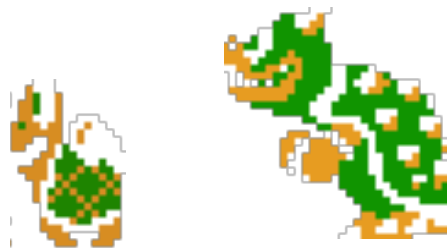The Great Mighty Poo
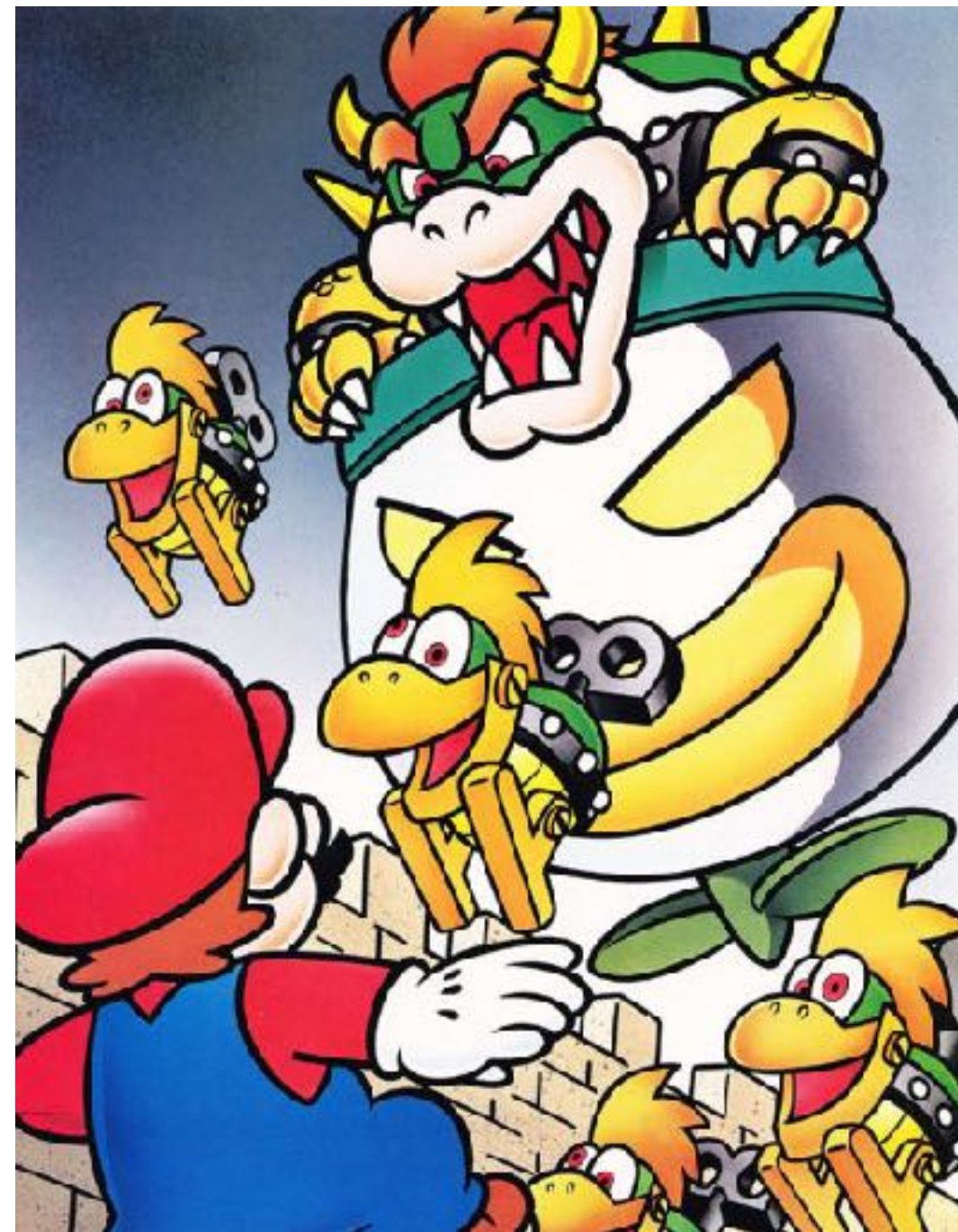Conker's Bad Fur Day © 2001 Rare (Nintendo)

Locally Sourced

Connect with minions / mini-bosses

Shigeru Miyamoto

Sequencing

Boss interconnection

Increasing difficulty

Sequencing

Bosses connected thematically, narratively & mechanically

Build on previous bosses, and break their rules

Toriel, Papyrus, Photoshop Flowey
Undertale © 2015 Toby Fox

Sequencing

Multi-battle sequence

Spider
Limbo © 2010 Playdead

Sequencing

Post-battle challenge

Playground Spider, Perpetual Pork Plant
Mushroom 11 © 2015 Untame

Skill Mastery & Teaching

Design a major challenge to test acquired skills

Increase difficulty and combine multiple skills

Use player's undivided attention to teach new ones

Skill-gating

Ultimate test for an essential skill

Ensure that player is prepared for what's next

Ken Oh
Shinobi © 1987 Sega

Skill-gating

Test the basics before increasing difficulty

Father Gascoigne
Bloodborne © 2015 FromSoftware (SCE)

Skill-gating

Ultimate test of collaboration

Atheon, Time's Conflux (Vault of Glass)
Destiny © 2014 Bungie (Activision)

Teaching

Undivided attention, no distractions

Introduce a new skill

Provide a reason to utilize the skill

Priming: hint to the expected behavior

King Bob-omb
Super Mario 64 © 1996 Nintendo

Teaching

Tutorialize the basics

The Chain
Furi © 2016 The Game Bakers

Teaching

Implicit teaching

Hindsight bias: retain by observing results

Dobkeratops
R-Type © 1987 Irem (Nintendo)

Modified Skill

Altered confrontation rules

Handicap

Ruby Weapon
Final Fantasy VII © 1997 Square

Modified Skill

Altered confrontation rules

Handicap

Malus
Shadow of the Colossus © 2005 Team Ice (SCE)

Modified Skill

Increased risk → different play style
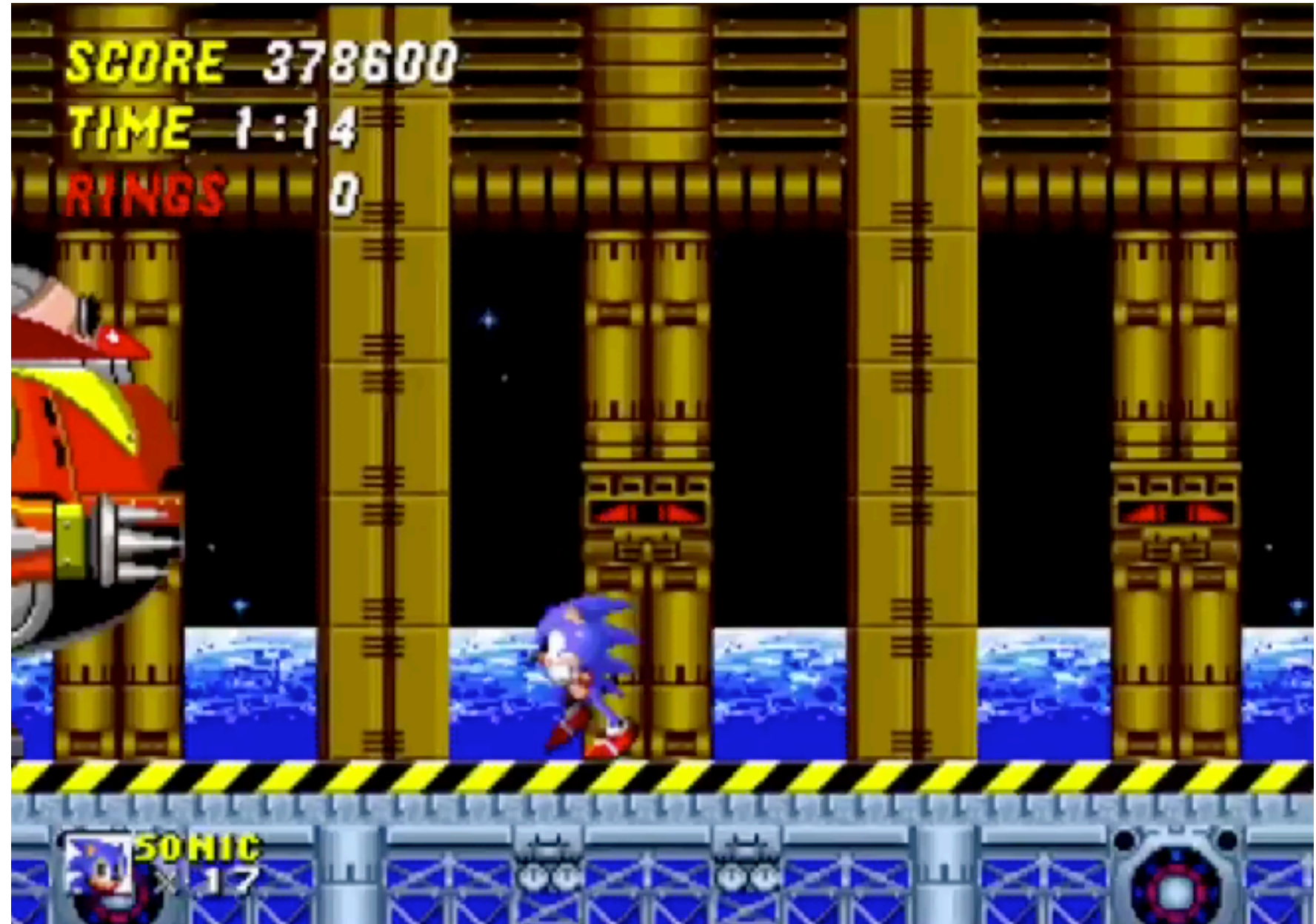
Death Egg Robot
Sonic the Hedgehog 2 © 1992 Sonic Team (Sega)

Modified Skill

Different play style & goals

Berserker
Gears of War © 2006 Epic

Modified Skill

Playable cutscenes =
infinite mechanics

Rafe
Uncharted 4 © 2015 Naughty Dog

Modified Skill

New constraints

GLaDOS
Portal © 2007 Valve

Multi-skill

Combining all skills into a single test

Wheatley
Portal 2 © 2011 Valve

Multi-skill

One skill at a time, in order

Phalanx
Shadow of the Colossus © 2005 Team Ice (SCE)

Multi-skill

One skill at a time, with player choice

Mr. Freeze
Batman: Arkham City © 2011 Rocksteady (Warner Bros.)

Side Skill

Unrelated mechanics

Slot Machine
Star Fox © 1993 Nintendo

Side Skill

Alternate rules

A glimpse to a different game
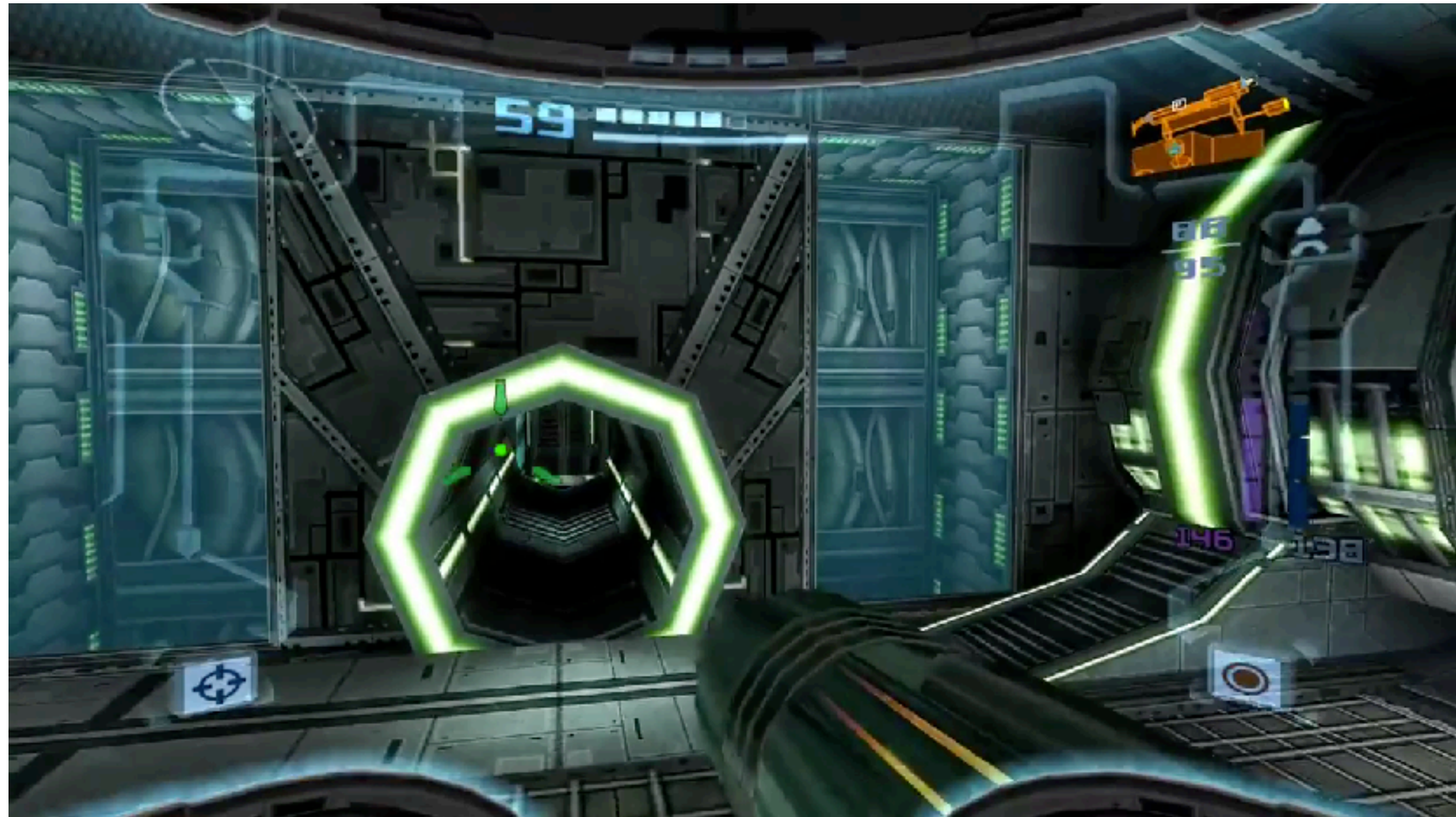
Spider Guardian
Metroid Prime 2 © 2004 Retro Studios (Nintendo)

Side Skill

Hat-tip skills

The Bride
Ms. Splosion Man © 2011 Twisted Pixel (Microsoft)

Side Skill

Hat-tip skills
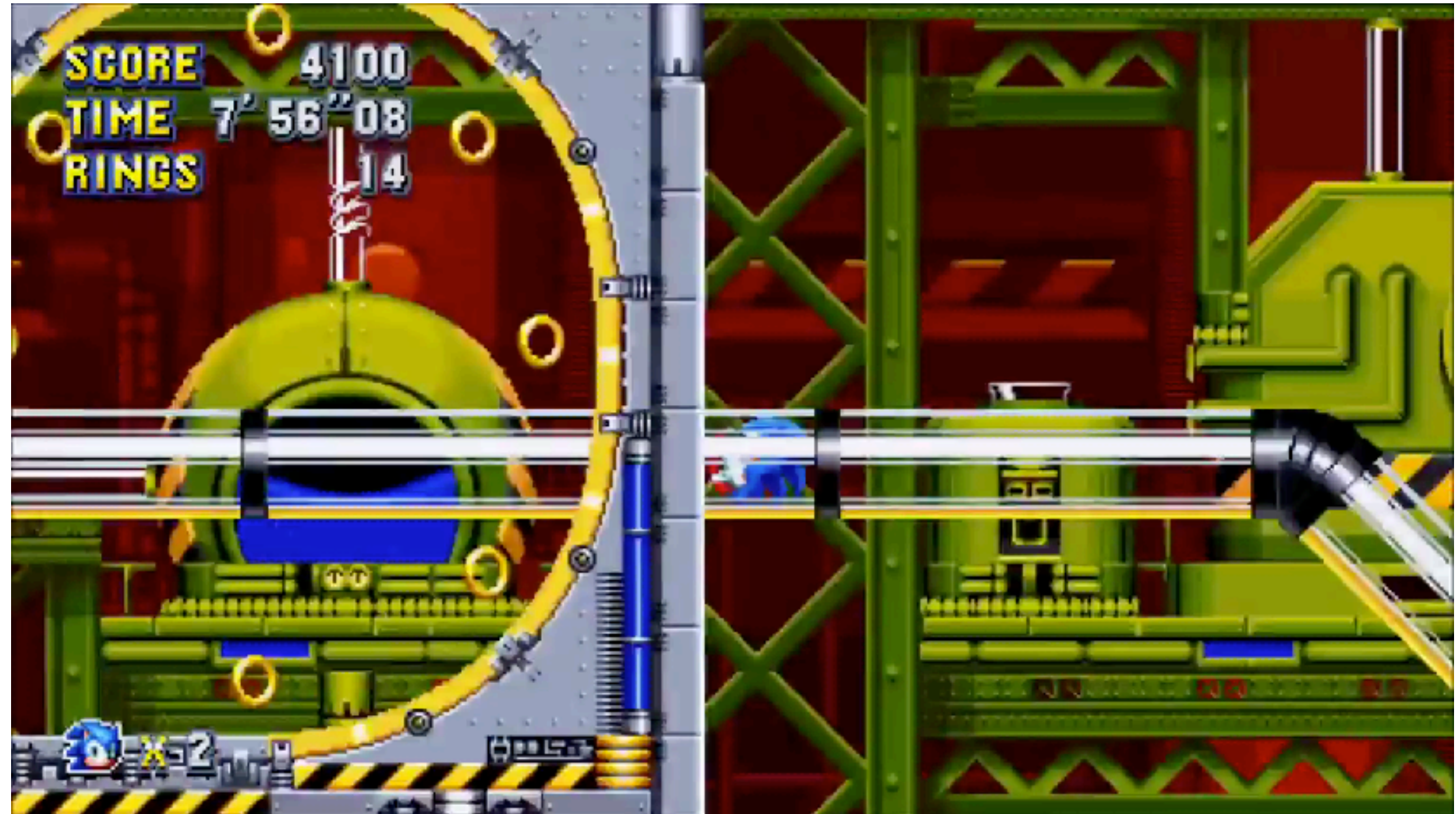
Dr. Robotnik's Mean Bean Machine
Sonic Mania © 2017 PagodaWest Games/Headcannon (Sega)

Confrontation

Design attack patterns around the tested skill
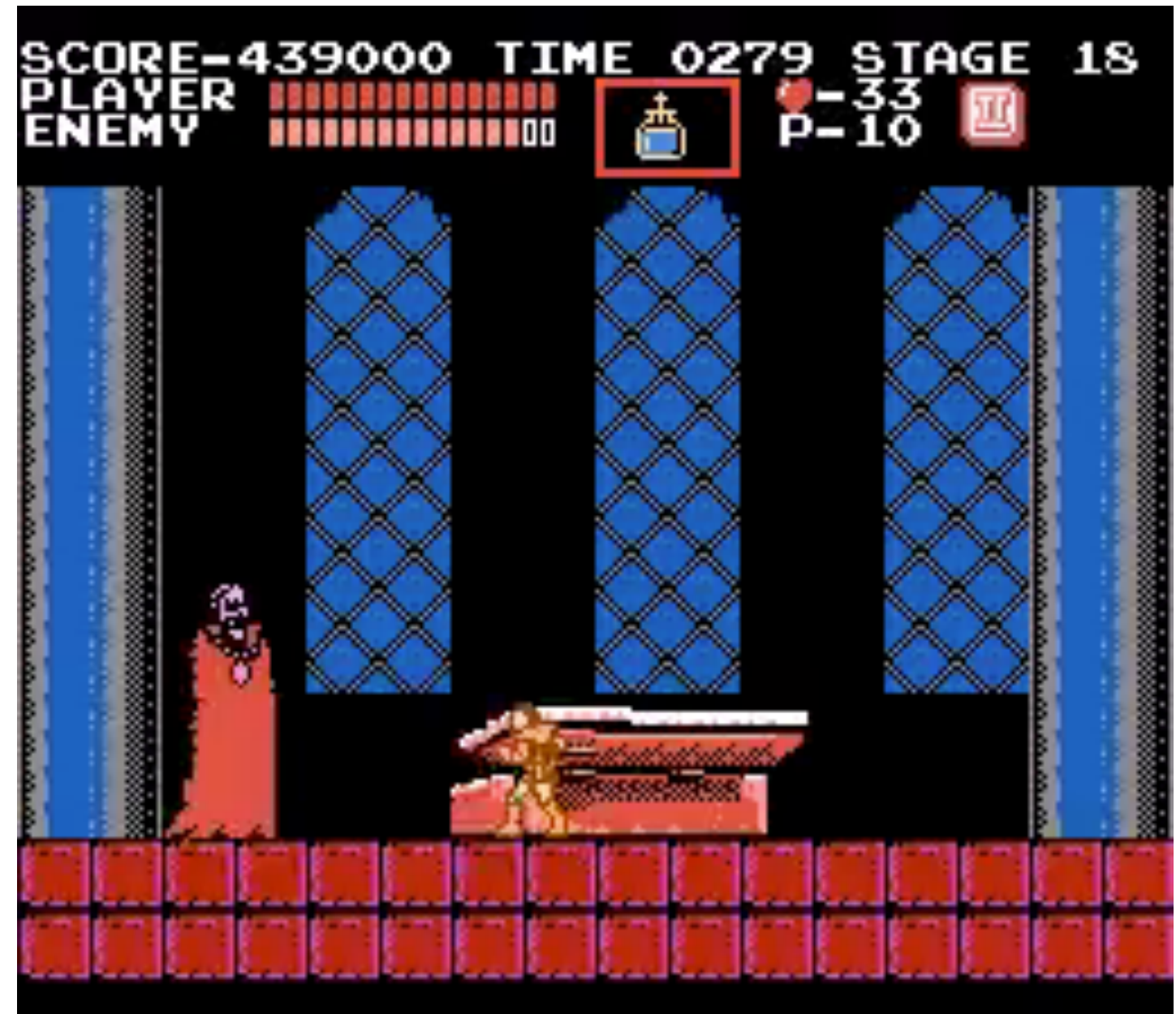
Encourage interaction between boss and player

Attack Pattern

Skill encourages confrontation

Negative space:
pattern complements the
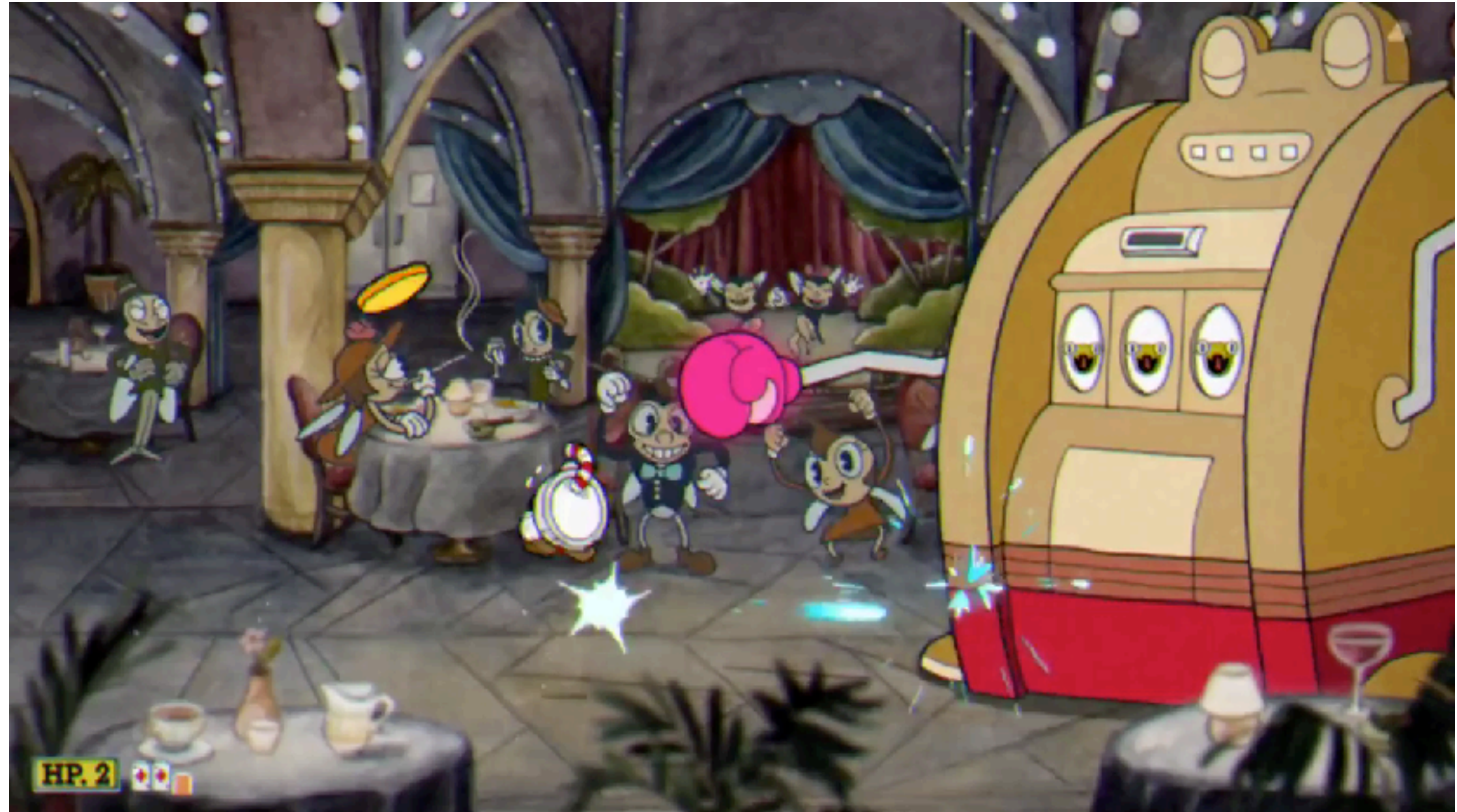tested skill

Dracula
Castlevania © 1986 Konami

Attack Pattern

Negative space:
pattern complements the
tested skill

Ribby and Croaks
Cuphead © 2017 Studio MDHR

Attack Pattern

Negative space: create a safe path for the player

Don't kill the player:
plan how to keep them alive

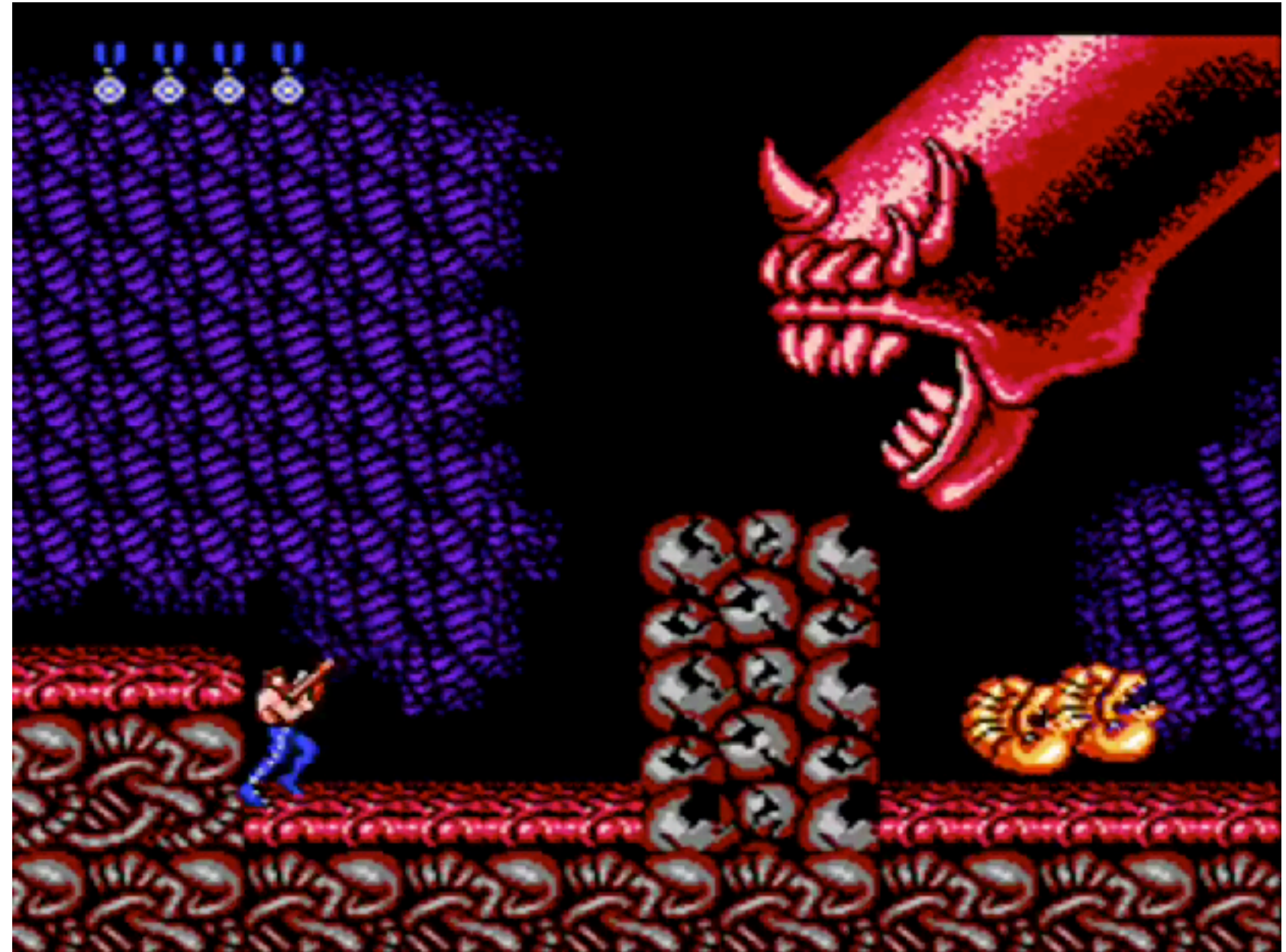**Zatsuza**
DoDonPachi DaiFukkatsu © 2008 Cave

Counter-attack

Poetic justice

Short time window +

Limited space =

Forced confrontation

Evade

Attack

Shadow Beast Entrance, Alien Head
Contra © 1987 Konami

Counter-attack

Intro boss + enhanced confrontation

Deflect attacks

Put the player in the line of fire

King Bob-omb
Super Mario 64 DS © 2005 Nintendo

Counter-attack

Multifocal deflection

Put the player in the line of fire

Twinrova
Zelda: Ocarina of Time © 1998 Nintendo

Counter-attack

Path to self-destruct

Iustitia
Bayonetta © 2012 PlatinumGames (Sega)

Counter-attack

Path to self-destruct

Tailored arena layout

Dingodile
Crash Bandicoot: Warped © 1998 Naughty Dog

Arena Layout

Small, open arena: encourage confrontation and prevent hiding

Temporary layout change
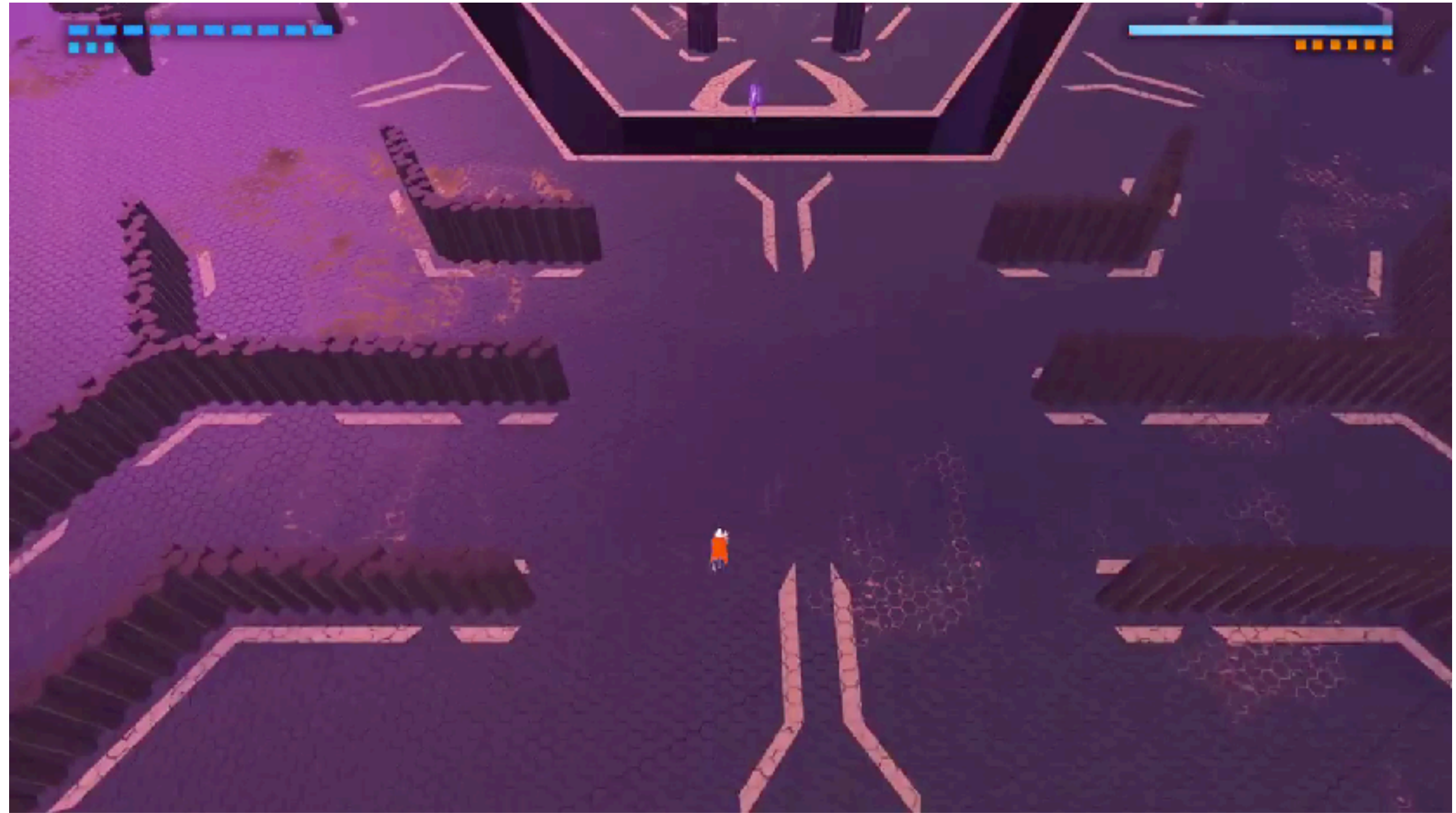

Cyberdemon
DOOM © 2016 id Software (Bethesda)

Arena layout

Designed confrontations

Wide space tailored to boss

The Burst
Furi © 2016 The Game Bakers

Arena layout

Phased layout

Lighting as layout tool

Teach, then test

Specter Knight
Shovel Knight © 2014 Yacht Club Games

Attack Space

Multiple approaches

Meaningful decisions

Dragon Slayer Ornstein & Executioner Smough
Dark Souls © 2011 FromSoftware (Bandai Namco)

Attack Space

Various strategies

Archdemon
Dragon Age: Origins © 2009 BioWare (EA)

Attack Space

Multiple approaches

Emergent behaviors

Big Daddy
BioShock © 2007 2K Games

Clarity

Avoid unpredictability, obscurity and randomness

Set clear goals, progression and hits

Predictable attacks

Clear Target

Helplessness leads to frustration & panic

Glowing weak spot = clear vulnerability

Call to action

NEWS IN BRIEF

Video Game Boss Thinking He Should Get Big Glowing Weak Spot On Back Checked Out

3/23/16 10:10am · SEE MORE: SCIENCE & TECHNOLOGY ∨

The Onion © 2016

Clear Target

Call to action

Provide guidance (if needed)

Quadratus
Shadow of the Colossus © 2005 Team Ice (SCE)

Clear Target

Familiar target =

Implicit goal

Dark Link
Zelda II: The Adventure of Link © 1987 Nintendo

Clear Target

Puzzle battle:

Figuring the goal <u>is</u> the challenge

Logic or Skill (Delta of Chance)
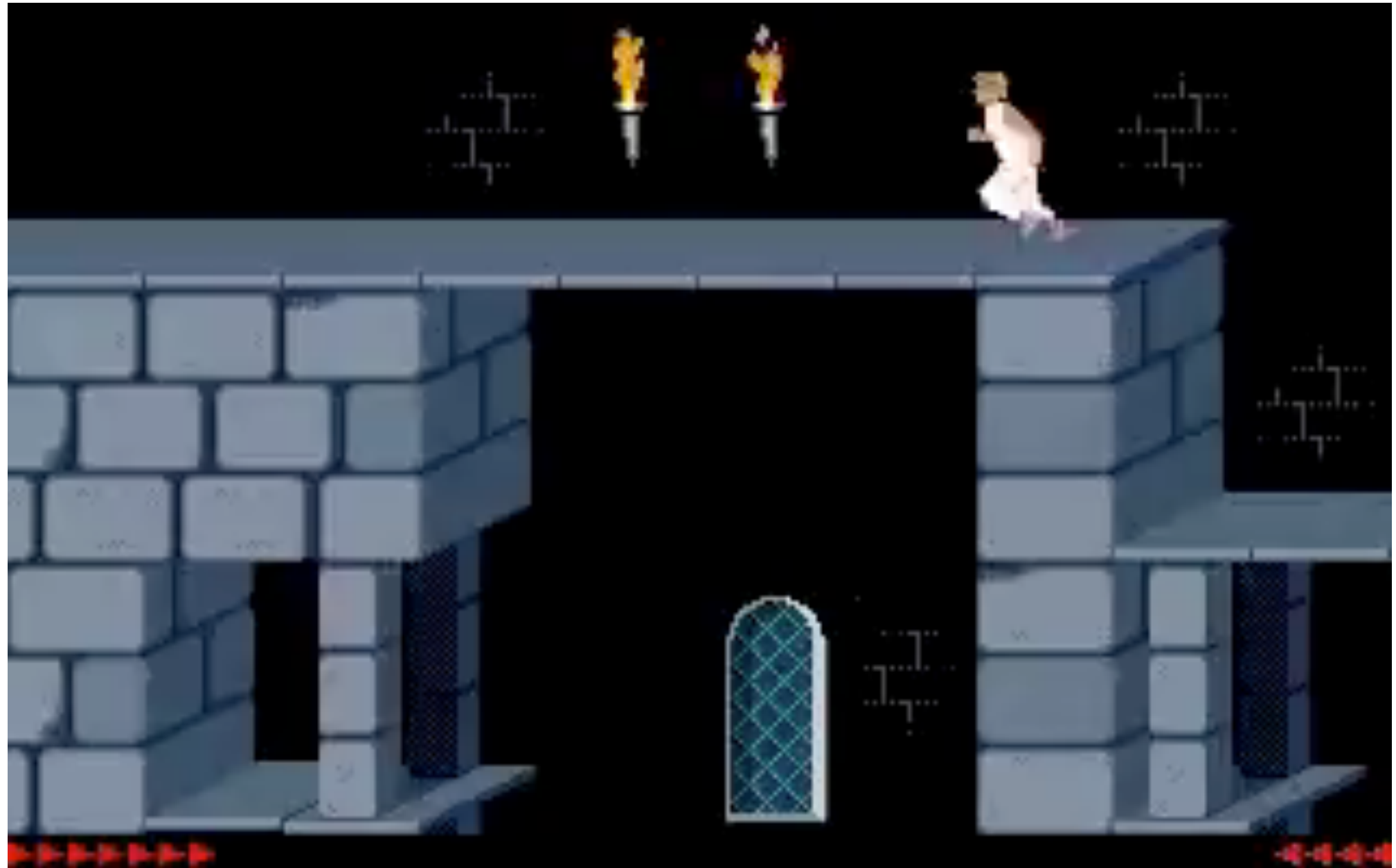
Mirror Prince
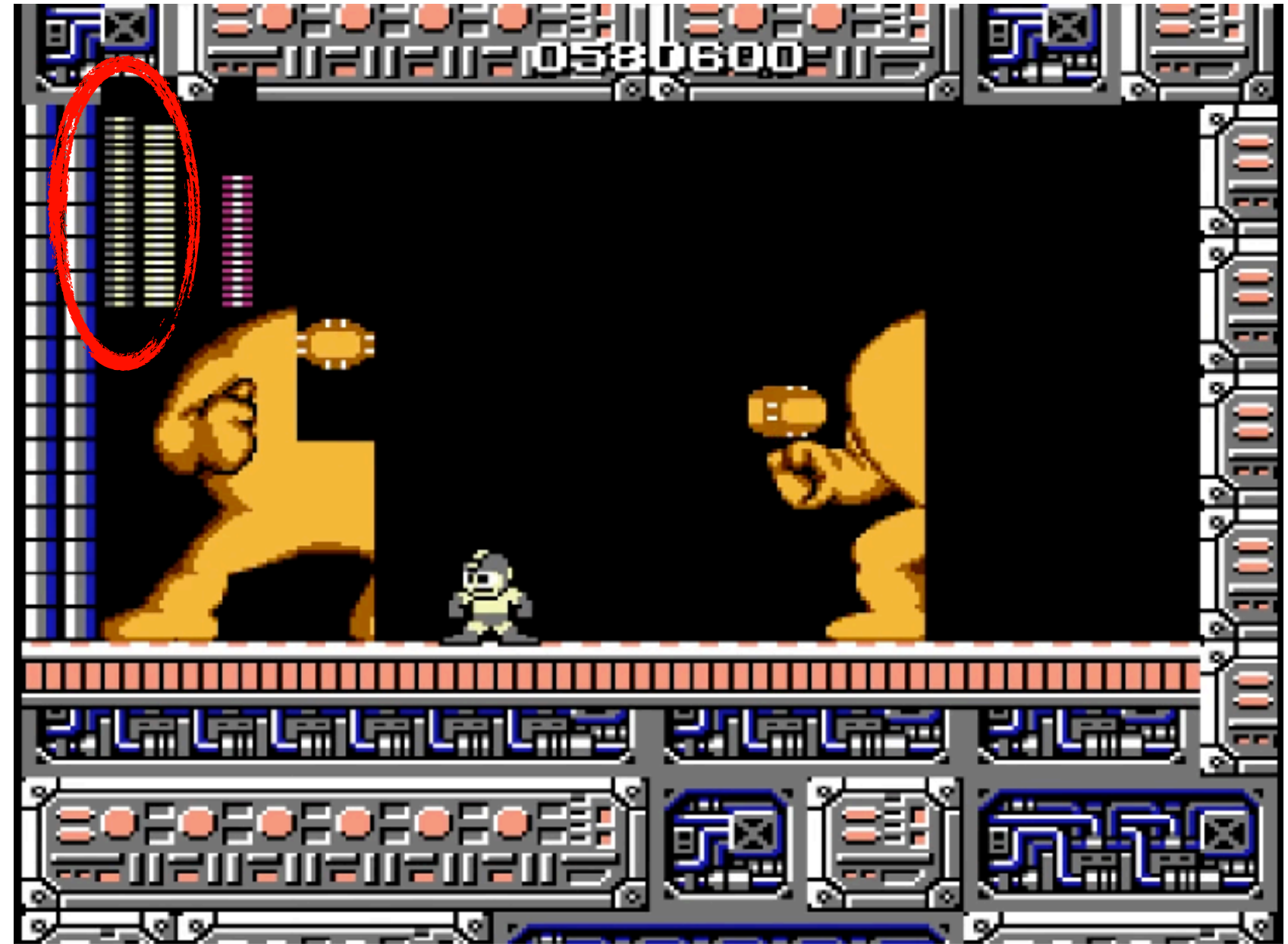Prince of Persia © 1989 Jordan Mechner

Clear Progression

Helplessness leads to frustration

Clear hit

Health bar

Yellow Devil
Mega Man © 1987 Capcom

Clear Progression

Multiple targets =

Clear progression

Hive Mind
Dead Space © 2008 Visceral Games (EA)

Clear Progression

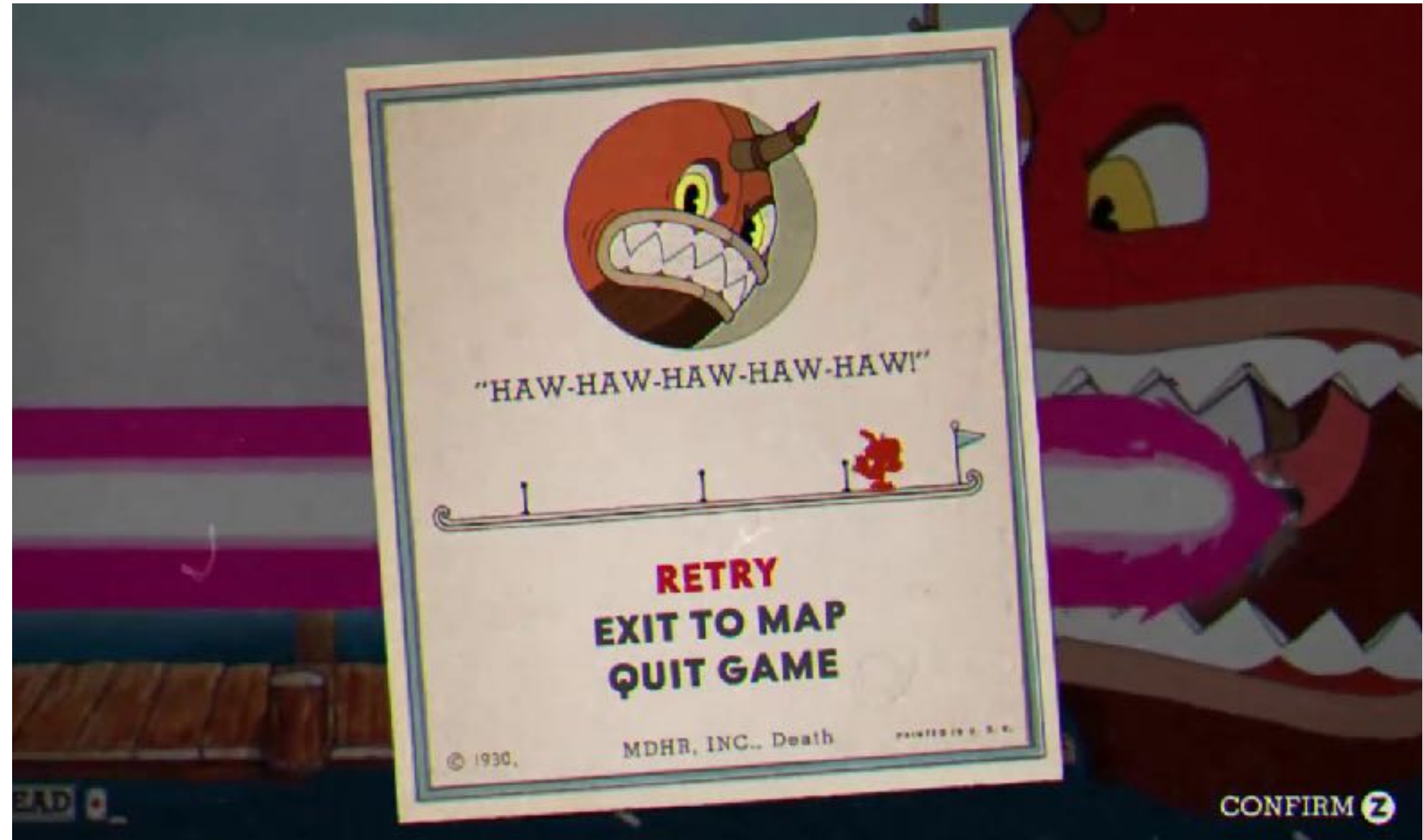Game-space health representation

Amar
Space Harrier © 1985 Sega

Clear Progression

Post-failure progress indicator (before a potential rage-quit)

Phase indicator
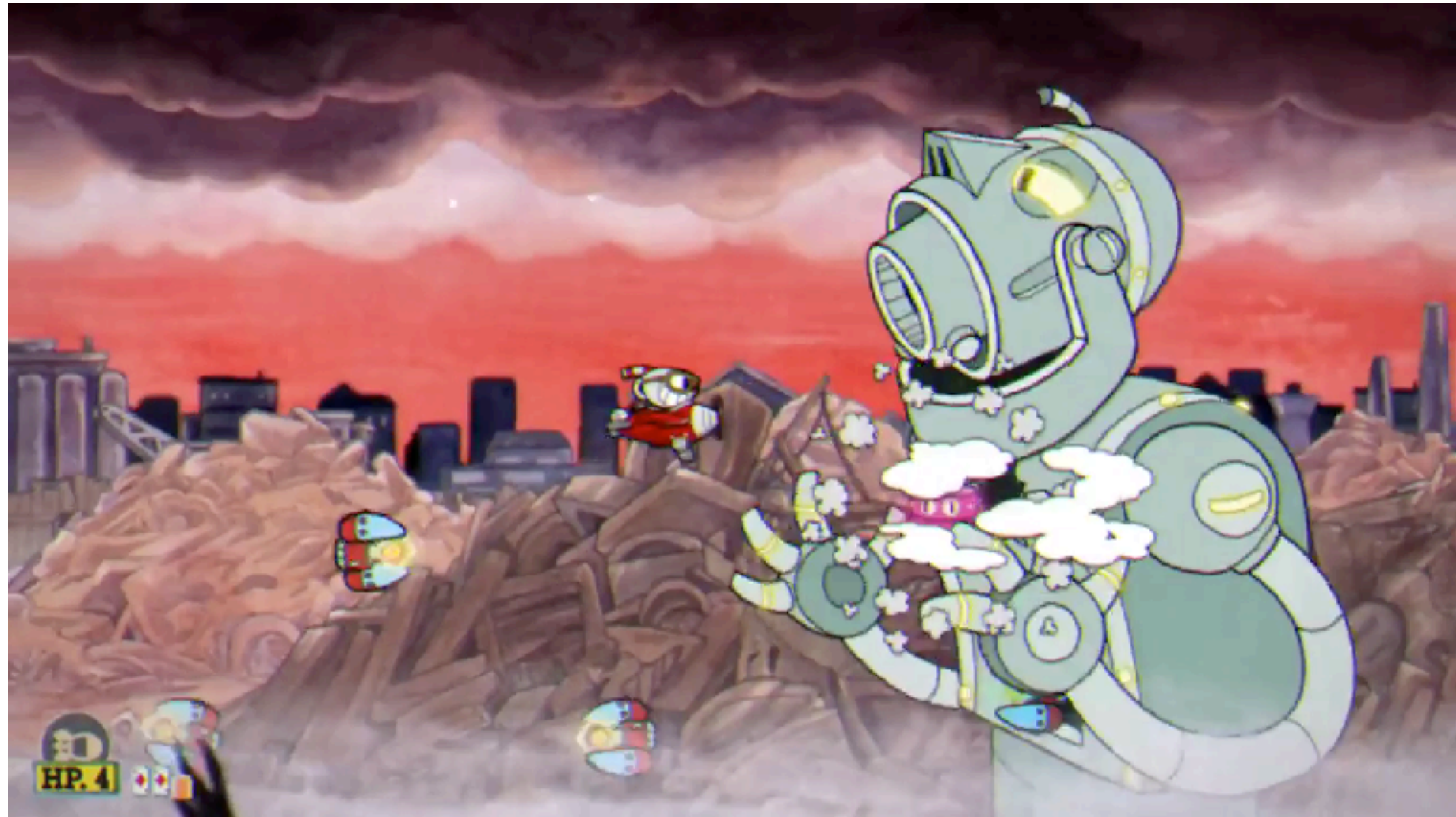

Cuphead © 2017 Studio MDHR

Predictable

Predictability = control

Provide info & time to react

Dr. Kahl's Robot
Cuphead © 2017 Studio MDHR

Predictable

Randomness = perceived helplessness
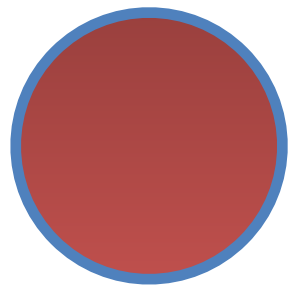

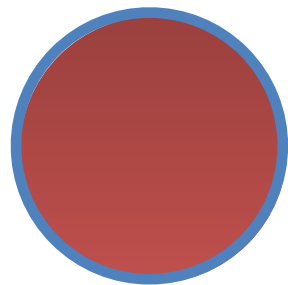
Ken Oh
Shinobi © 1987 Sega

Predictable

Predictability = control

Provide info & time to react

Amar
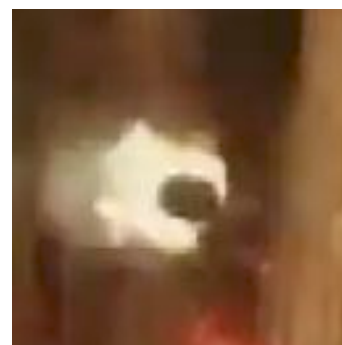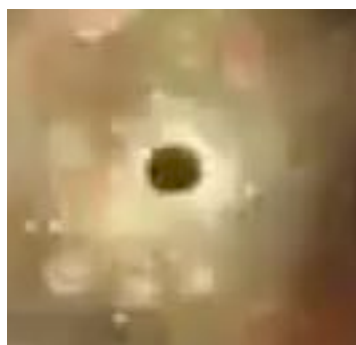Space Harrier © 1985 Sega

Predictable Attacks

Predictiveness = control

Provide info & time to react

Cyberdemon
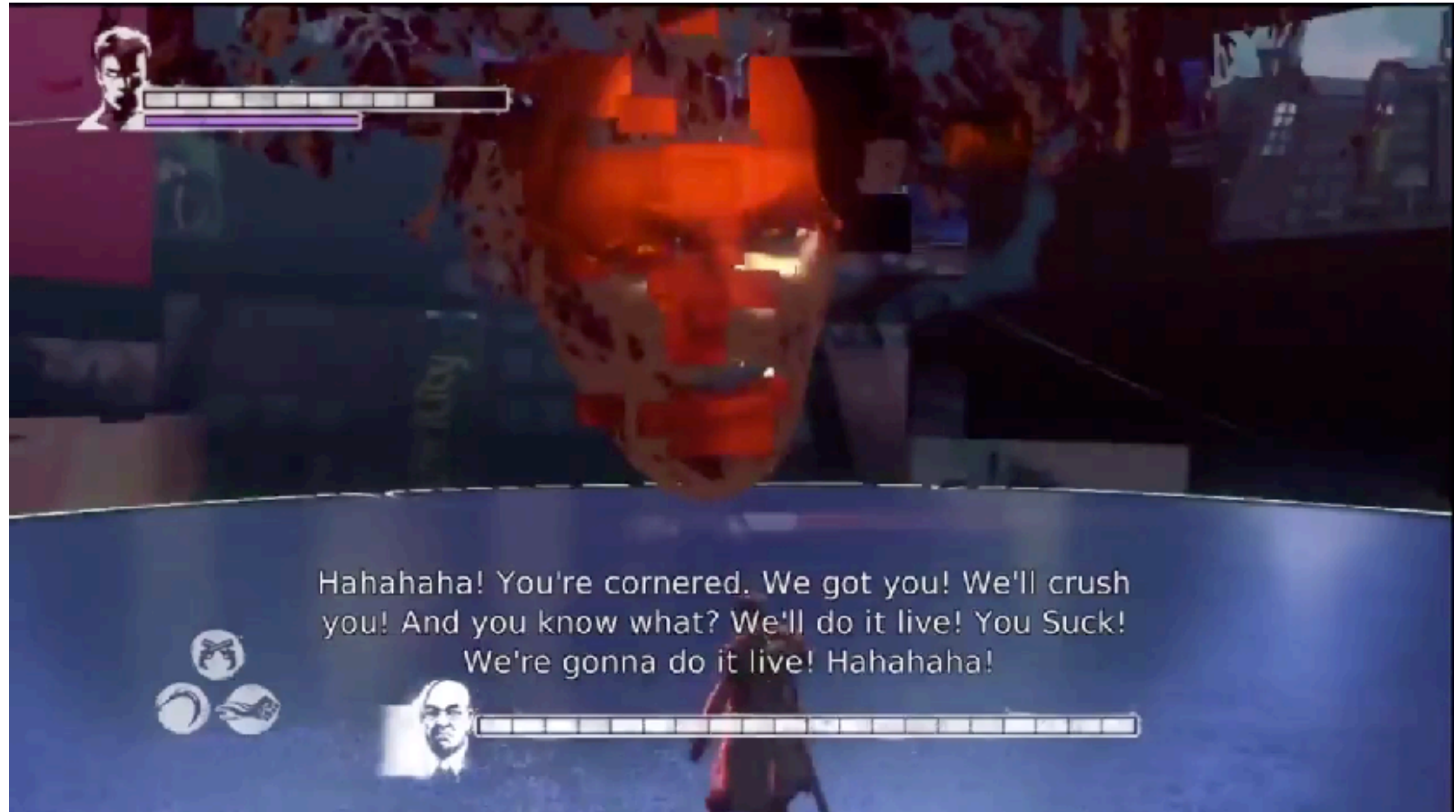DOOM © 2016 id Software (Bethesda)

Predictable Attacks

Predictiveness = control

Provide info & time to react

Bob Barbas
DmC: Devil May Cry © 2013 Ninja Theory (Capcom)

Telegraphing

Control over attacks

If unavoidable, telegraph

Too fast or unknown origin: compensate for limited info

Preemptive 'shadow'

Bowser
Super Mario Galaxy 2 © 2010 Nintendo

Telegraphing

Preemptive animation

Vocal warning

Valravn, God of Illusion
Hellblade: Senua's Sacrifice © 2017 Ninja Theory

Telegraphing

Preemptive 'shadow'

Preemptive animation

El Lunchador
Rayman Legends © 2013 Ubisoft

Telegraphing

Preemptive gestures

Master Hand
Super Smash Bros. © 1999 Hal Laboratory (Nintendo)

Telegraphing

Slow motion

Provide time to react

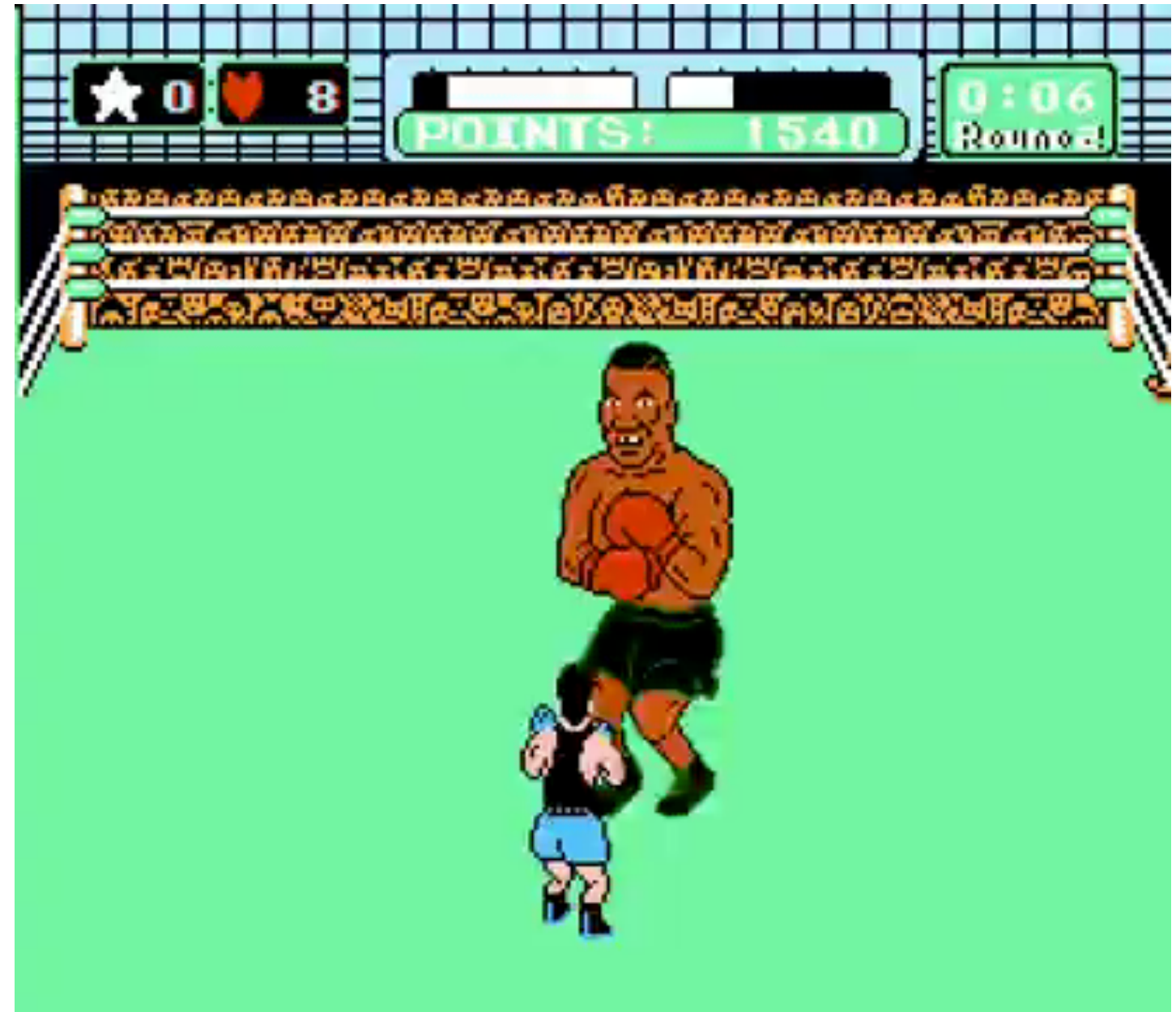**Rafe**
Uncharted 4 © 2015 Naughty Dog

Memorization

Repeating waves

Previous wave telegraphs the next one

Anticipate to survive

Mike Tyson
Mike Tyson's Punch-Out!! © 1987 Nintendo

Memorization

Repeated attack waves

Observe to avoid next

Memorize previous behavior

Wally Warbles
Cuphead © 2017 Studio MDHR

Memorization

A single, long attack wave

Memorize all to survive

Little Horn
Super Meat Boy © 2010 Team Meat

Difficulty
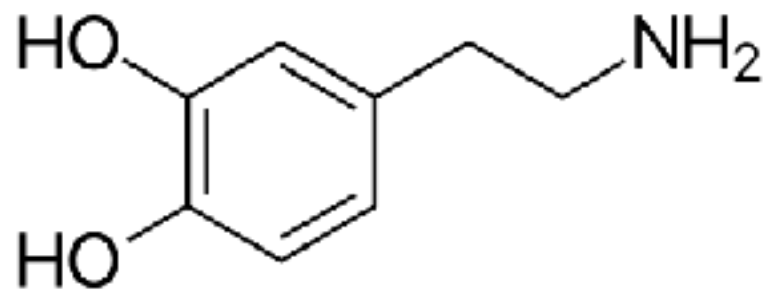
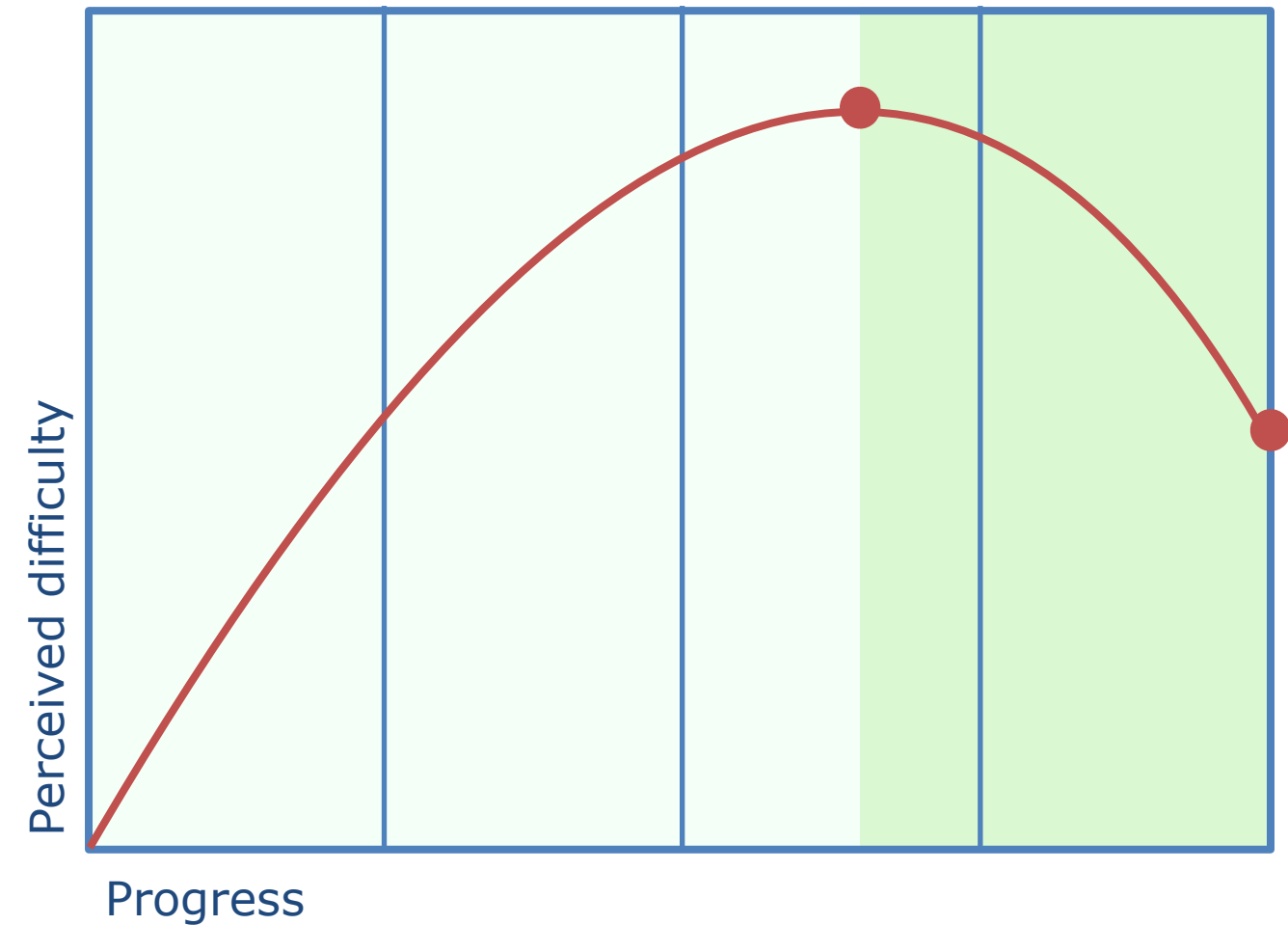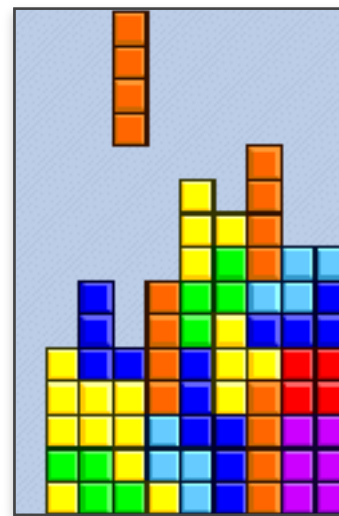Delta of Chance

Reward, not punish

Delta of Chance

Challenging peak +

Foreseeable end +

Noticeable easing

Positive Delta of Chance:
Anticipated failure → Anticipated triumph

Dopamine: rewards and encourages
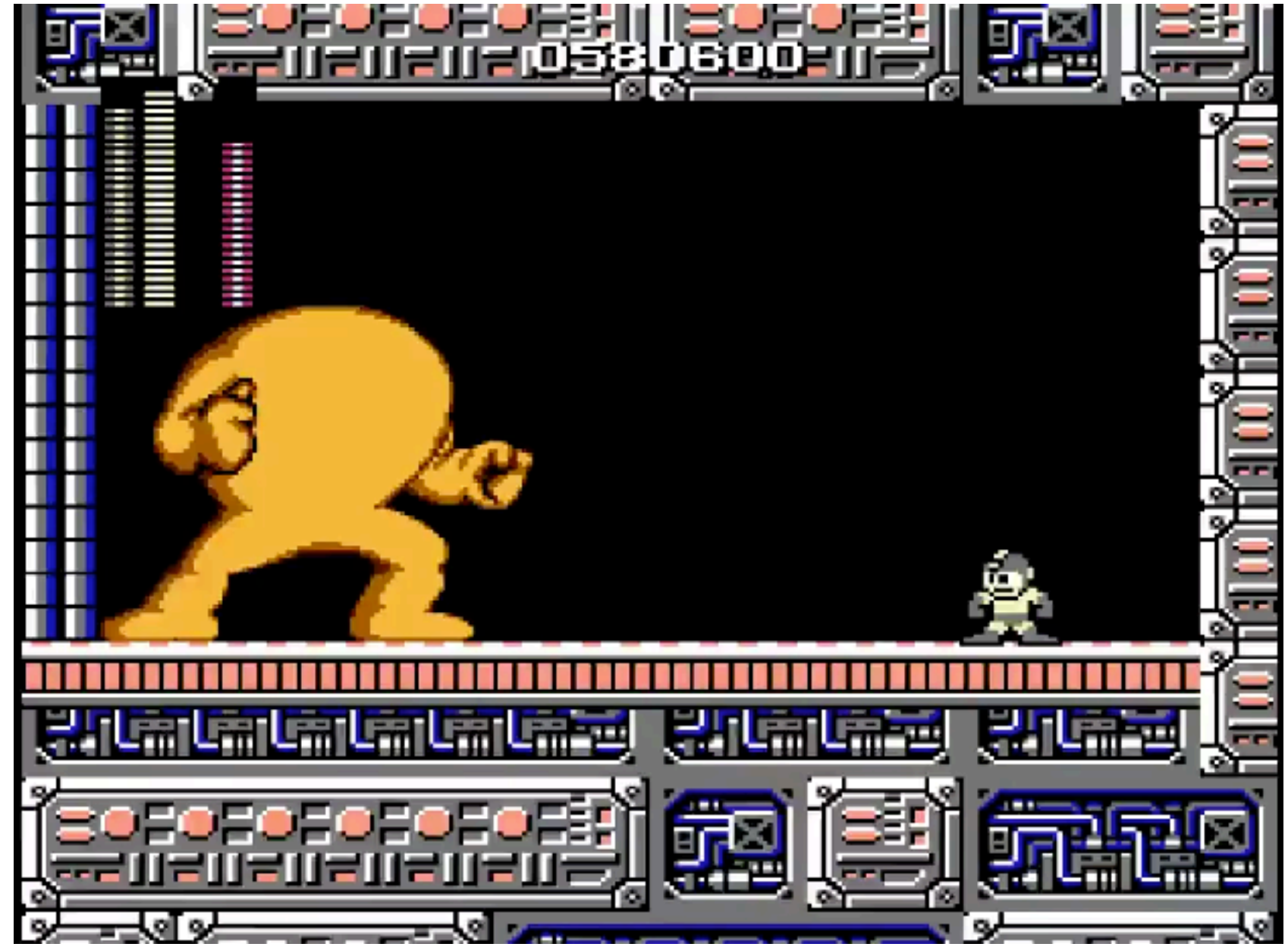the behavior that leads to this change

Difficulty Curve

Delta of Chance:
Anticipated triumph

End of each attack wave is clear

Difficulty increases towards the middle

Eases when a clear ending is in sight

Yellow Devil
Mega Man © 1987 Capcom

Difficulty Curve

Delta of Chance:
Anticipated triumph

Difficulty peaks on split

Eases when each piece is
destroyed

Intruder
Gradius 2 © 1998 Konami

Difficulty Curve

Delta of Chance:
Anticipated triumph

Progression is clear

Risk (perceived difficulty) reduced
towards the end

Hive Mind
Dead Space © 2008 Visceral Games (EA)

Difficulty Curve

Peaks and valleys

Anticipated triumph via memorizable patterns

Through the Fire and Flames
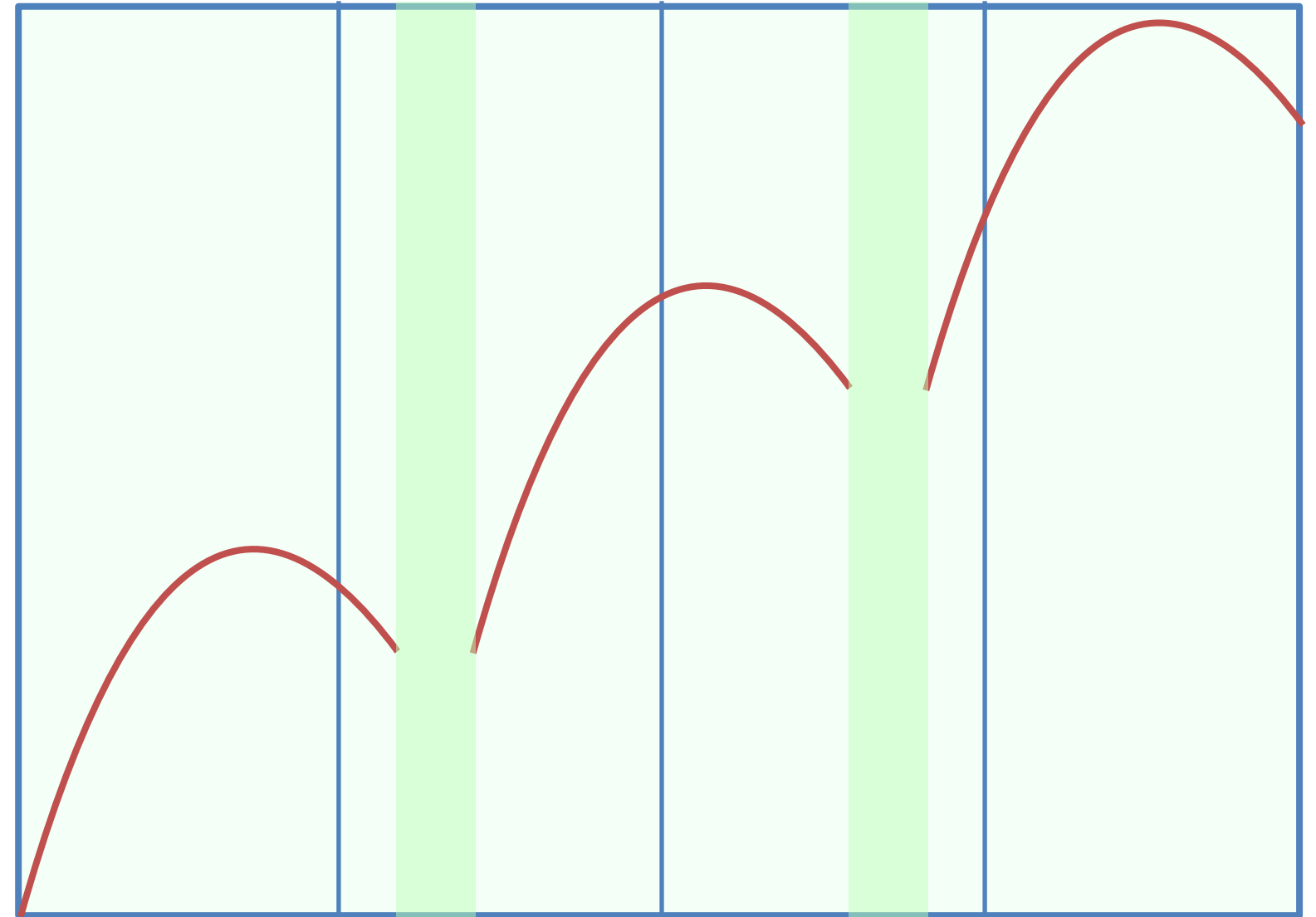Guitar Hero 3 © 2007 Neversoft (Activision)

Multi-phase

Reward: break before increasing difficulty or change the battle

Best if break is anticipated & eased

Not a way to just extend gameplay

Multi-phase

Test different skills

Phalanx
Shadow of the Colossus © 2005 Team Ice (SCE)

Multi-phase

Teach, then test

So Shi
Nier:Automata © 2017 PlatinumGames (Square Enix)

Multi-phase

Advance the narrative

Different rules

Ra's al Ghul
Batman: Arkham City © 2011 Rocksteady (Warner Bros.)

Pacifism

Difficulty level per boss

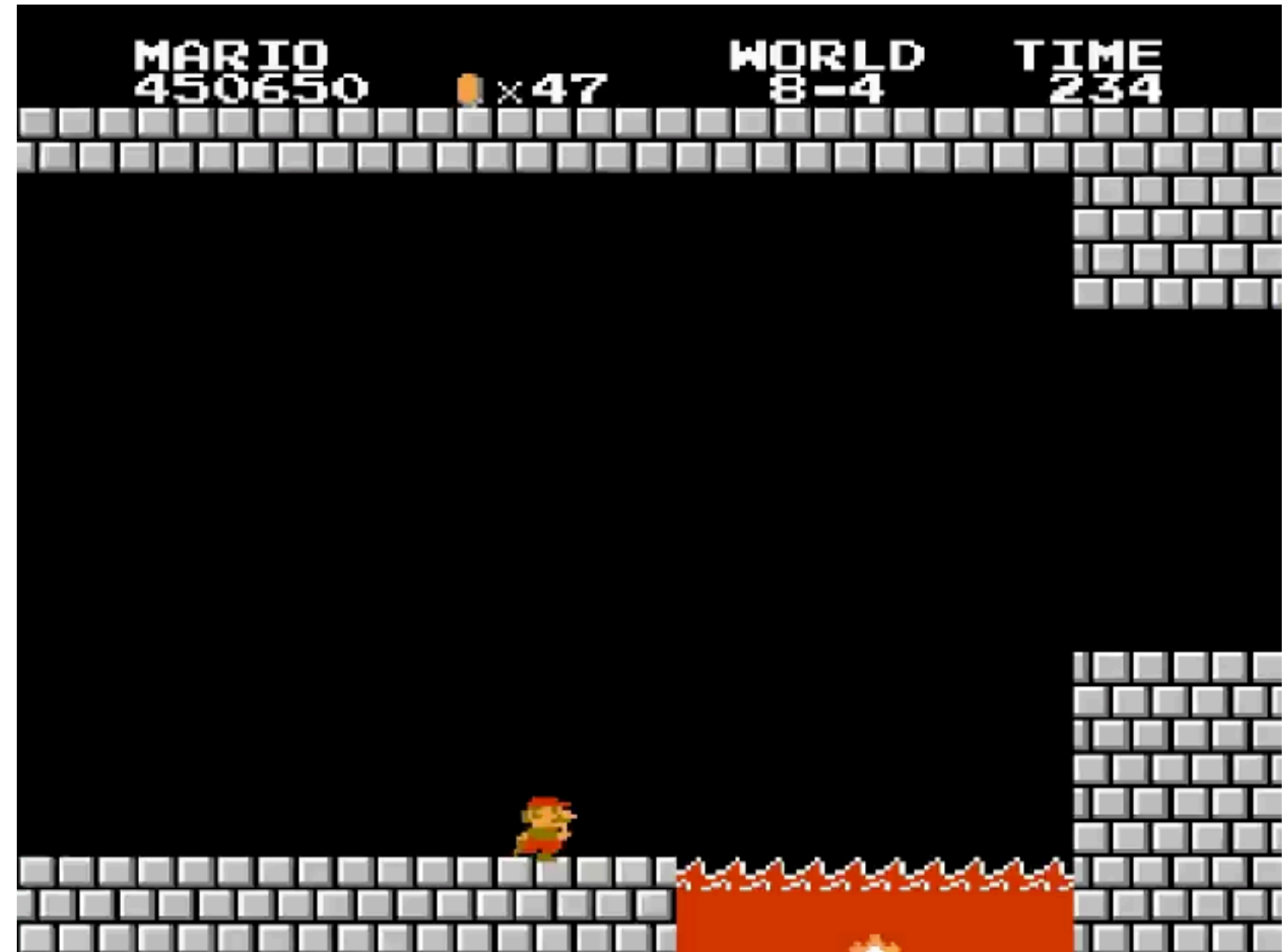Cuphead © 2017 Studio MDHR

Pacifism

Non-fighting option

Challenge still maintained

Bowser
Super Mario Bros. © 1985 Nintendo

Pacifism

Non-fighting option

Challenge still maintained

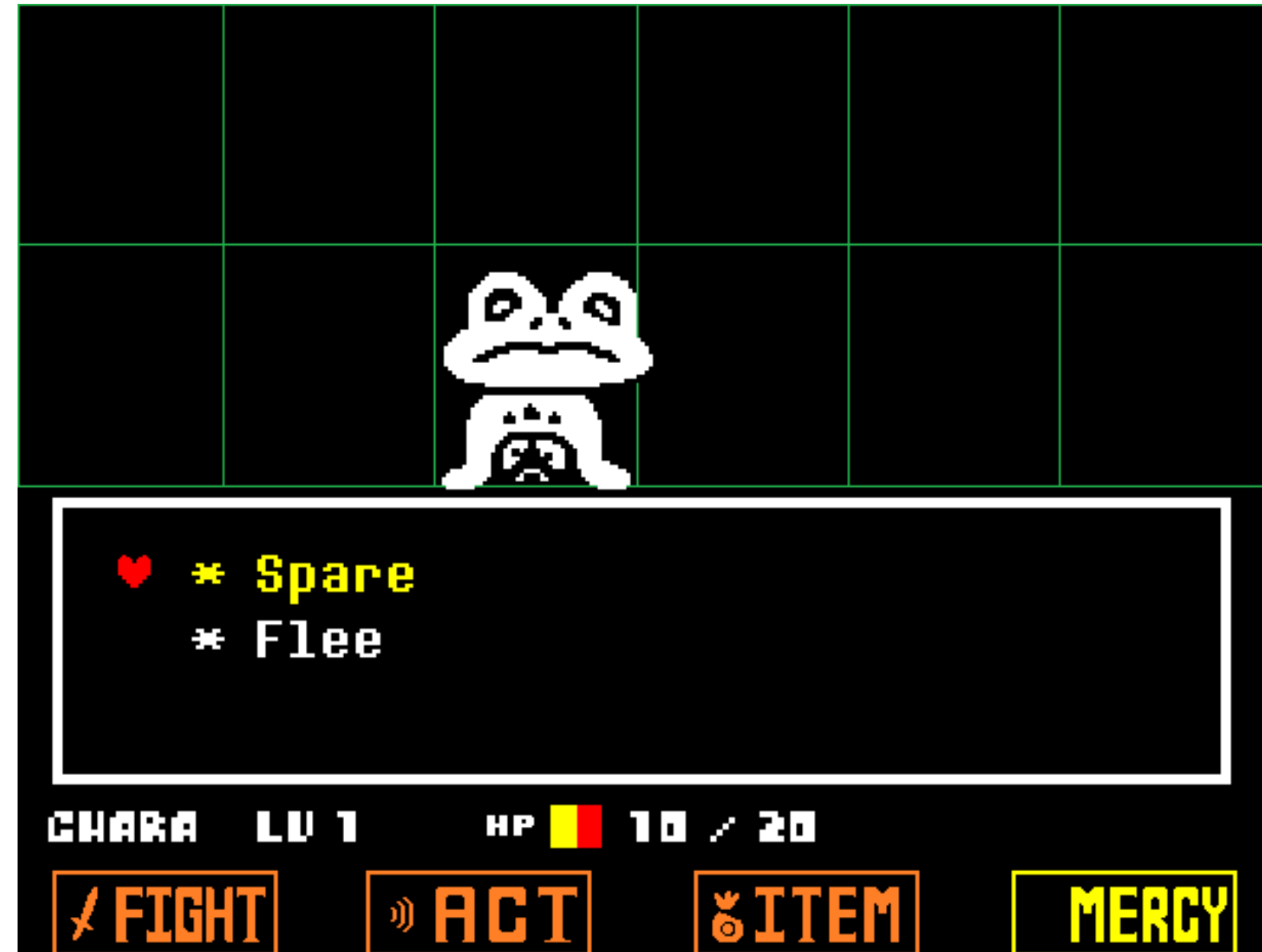Master
Fallout © 1997 Interplay Productions

Skipping

Confrontations can end without a fight

True Pacifist route

Undertale © 2015 Toby Fox

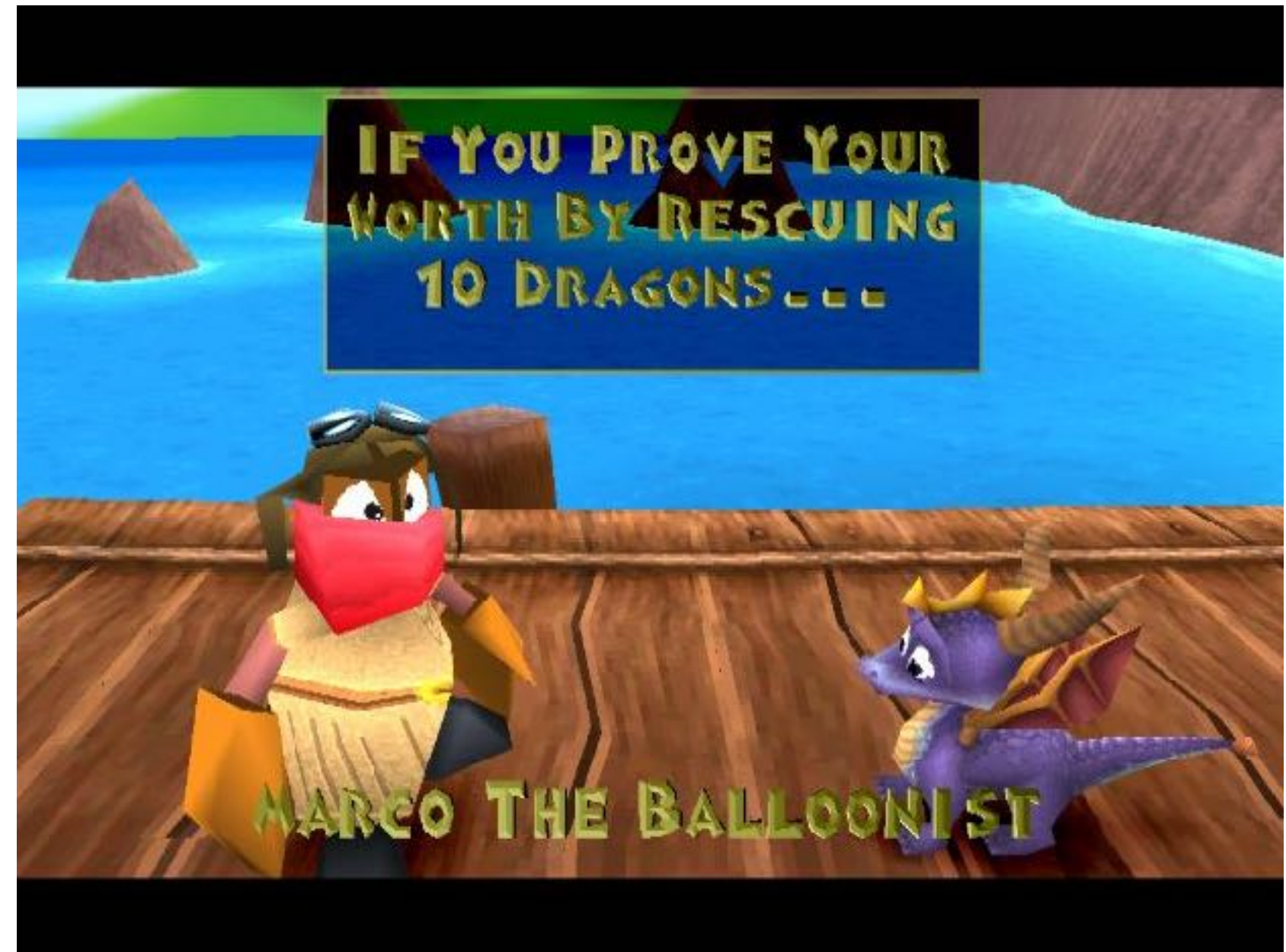# Skipping

Use collectibles to progress

Avoid the battle

Spyro the Dragon © 1998 Insomniac (SCE)

Skipping

Choice of quests

Personal advancement

Battle is a reward, not a punishment

Nergigante
Monster Hunter: World © 2018 Capcom

Skipping

Is this boss battle essential to the progression?

Are you excluding unable, "non-deserving" players?

Battle must be rewarding, but different players enjoy different aspects of the game

Consider easy mode, alternate challenge and even skipping

Award "main" path with items, access and endings

Increase replay value

Expose more of your art

Work towards true inclusiveness (while still maintaining the challenge)

Rules

Reward

Take a break from normal gameplay. Boss should be an exciting reward for player's persistence, not a punishment they need to endure to extend your play time.

Tell a story

Use this pause in gameplay to advance the narrative and create emotional attachment. Build anticipation before the battle and delight in its results.

Locally source

Fit the boss to its environment, minions and territory, and vice versa. Connect to other bosses and plan the timing and battle sequences.

Skill test & intro

Test recently taught skills to make sure the player is prepared for what's coming next. Also, use the undivided user attention to teach them new skills.

Don't kill

Don't plan how to kill the players; plan how to keep them alive and design attacks around that negative space.

Keep it clear

Keep attacks predictable, telegraphed (or at least memorizable). Make sure player goals, progression and hits are clearly presented. Players tend to give up when they are helpless, or perceive themselves to be.

Allow player expression

Design bosses that can be approached and beaten in different ways. Leave room for true mastery while providing space for different player skills and archetypes.

Phase wisely

Don't just to stretch play time. Split the battle into phases when you'd like to change or combine mechanics, advance the narrative, or provide a mental break before increasing difficulty.

Difficulty curve & Delta of Chance

Use attack waves and phases with peaks and valleys to reward player mastery. Allow players to anticipate the end while experiencing reduced risk. Consider the true reason for the difficulty level of the boss, and how it can be mitigated, personalized, or even skipped.

Rules are meant to be broken

Boss gameplay is uniquely qualified to allow any and all rules to be broken. Experiment with different mechanics, unique visuals, alternate rules, tangent narratives, different viewpoints, randomness, procedural generation, etc. Design a battle that can dazzle, engage, challenge, and (most importantly) reward players with different expectations, interests, skills and abilities.