Half-Life 2 Deconstruction

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Game Deconstruction

High Concept

Half-Life 2 is a first-person shooter that requires a combination of combat and puzzle-solving to advance the plot.

Skill Progression Chart

JIAFAN LU ->	Chapter 1		Chapter 2		Chapter 3		Chapter 4		Chapter 5		Chapter 6		Chapter 7	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Actions														
Move	E	M	H	H	H	H	H	H	H	H	H	H	H	H
Jump	E	M	H	H	H	H	H	H	H	H	H	H	H	H
Crouch	E	M	H	H	H	H	H	H	H	H	H	H	H	H
Interaction	E	M	H	H	H	H	H	H	H	H	H	H	H	H
Shoot	E	M	H	H	H	H	H	H	H	H	H	H	H	H
Weapons														
Crowbar			E	M	H	H	H	H	H	H	H	H	H	H
USP Match					E	M	H	H	H	H	H	H	H	H
MP7						E	M	H	H	H	H	H	H	H
Emplacement Gun						E	M	H	H	H	H	H	H	H
Gravity Gun									E	M	H	H	H	H
SPAS-12												E	M	H
MK3A2 Grenade												E	M	H
Resistance Crossbow													E	M
.357 Magnum														E
RPG														E
Pheropods														
Overwatch Standard Issue Pulse Rifle														
Hopper Mine														
Enemies														
City Scanner	E	M	H	H	H									
Metro Cops	E	M	H	H	H	H	H	H	H	H			H	H
Barnacle					E	M	H	H	H	H				
Headcrab						E	M	H	H	H	H	H	H	H
Hunter-Chopper						E	M	H	H	H				
Combine Gunship							E	M	H	H	H	H	H	H
Standard Zombie											E	M	H	H
Fast Headcrab											E	M	H	H
Fast Zombie											E	M	H	H
Poison Headcrab												E	M	H
Poison Zombie												E	M	H
Combine Soldier													E	M
Rollermine													E	M
Combine Dropship														E
Antlion														
Antlion Guard														
Props														
HEV Suit			E	M	H	H	H	H	H	H	H	H	H	H
Health Vial			E	M	H	H	H	H	H	H	H	H	H	H
Health Kit			E	M	H	H	H	H	H	H	H	H	H	H
HEV Suit Battery					E	M	H	H	H	H	H	H	H	H
Health Charger					E	M	H	H	H	H	H	H	H	H
Suit Charger					E	M	H	H	H	H	H	H	H	H
Supply Crate						E	M	H	H	H	H	H	H	H
Ammo Crate							E	M	H	H	H	H	H	H
Explosion Barrel					E	M	H	H	H	H	H	H	H	H
Airbot							E	M	H					
Buggy													E	M
Thumper														

Figure 1 Skill Progression Chart C1-7 [1]

JIAFAN LU ->	Chapter 8		Chapter 9		Chapter 10		Chapter 11		Chapter 12		Chapter 13		Chapter 14	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Actions														
Move	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Jump	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Crouch	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Interaction	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Shoot	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Weapons														
Crowbar	H	H	H	H	H	H	H	H	H	H	H	H	H	H
USP Match	H	H	H	H	H	H	H	H	H	H	H	H	H	H
MP7	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Emplacement Gun	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Gravity Gun	H	H	H	H	H	H	H	H	H	H	H	H	H	H
SPAS-12	H	H	H	H	H	H	H	H	H	H	H	H	H	H
MK3A2 Grenade	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Resistance Crossbow	H	H	H	H	H	H	H	H	H	H	H	H	H	H
.357 Magnum	M	H	H	H	H	H	H	H	H	H	H	H	H	H
RPG	M	H	H	H	H	H	H	H	H	H	H	H	H	H
Pheropods	E	M	H	H	H	H	H	H	H	H	H	H	H	H
Overwatch Standard Issue Pulse Rifle			E	M	H	H	H	H	H	H	H	H	H	H
Hopper Mine				E	M	H	H	H	H	H	H	H	H	H
Enemies														
City Scanner														
Metro Cops							H	H			H			H
Barnacle														
Headcrab	H	H					H	H						
Hunter-Chopper														
Combine Gunship	H	H						H						
Standard Zombie			H	H			H	H						
Fast Headcrab			H	H		H	H	H						
Fast Zombie			H	H			H	H						
Poison Headcrab			H	H										
Poison Zombie	H		H	H										
Combine Soldier	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Rollermine	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Combine Dropship	M	H			H	H	H	H						
Antlion	E	M	H	H	H	H	H							
Antlion Guard	E	M	H	H	H	H	H							
Props														
HEV Suit	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Health Vial	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Health Kit	H	H	H	H	H	H	H	H	H	H	H	H	H	H
HEV Suit Battery	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Health Charger	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Suit Charger	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Supply Crate	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Ammo Crate	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Explosion Barrel	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Airbot														
Buggy	H													
Thumper	E	M												

Figure 2 Skill Progression Chart C7-14 [1]

Legend				
	E	M	H	X
New skills	Intro	Reinforce	Master	
Starting Skills (START)	Beginner	Advanced	Expert	Master
Challenges	Easy	Medium	Hard	Legendary

Figure 3: Skill Progression Chart Legend [1]
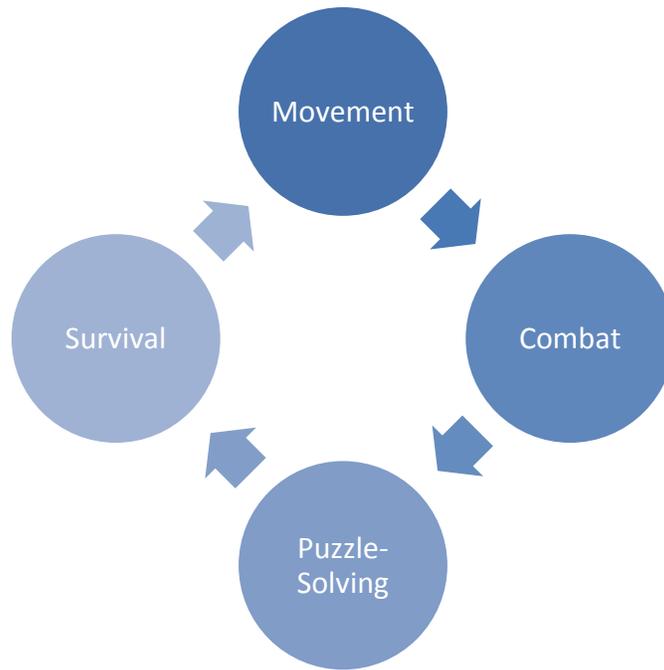
Gameplay Loops

Core (Primary) Gameplay Loop

Figure 4: Primary Gameplay Loop [2]

Secondary Gameplay Loop

Figure 5: Secondary Gameplay Loop [2]

Tertiary Gameplay Loop

Take the Game to Higher Level

Learn more about the story of the game

Constantly improve combat skills

Find and Collect the Secrets

Figure 6: Tertiary Gameplay Loop [2]

Gameplay Styles / Systems

Gameplay Systems

1. Weapons and Combat System

Weapon Type	Range	Damage	Fire Rate	Ammo Capacity	Accuracy
Crowbar	Melee	10	N/A	N/A	N/A
USP Match	Short to Mid	8	120 RPM (Semi-automatic)	18/150	Good
MP7	Short to Mid	4	800 RPM	45/225	Poor
Emplacement Gun	Short to Mid	15	900 RPM	Infinite	Fair
SPAS-12	Short	8*7 (Primary Fire) 84 (Secondary Fire)	68 RPM (Primary Fire) 58 RPM (Secondary Fire)	6/30	Poor
Overwatch Standard Issue Pulse Rifle （OSIPR）	Short to Mid	1000 (Energy Ball) 8 (Pulse)	600 RPM 60 RPM (Energy Ball)	30/90 3 Energy Ball	Bad
Gravity Gun	Short to Mid	Varies	120 RPM	N/A	Varies
MK3A2 Grenade	Medium	150	N/A	1/5	N/A
Colt Python	Long	40	80 RPM	6/12	High
Resistance Crossbow	All Distances	100	31 RPM	1/10	High
Pheropods	Short	Varies	N/A	Infinite	N/A
RPG	Medium to Long	100	34 RPM	1/3	Varies
Hopper Mine	Varies	Varies	N/A	N/A	N/A

Table 1 Weapon and Combat System Chart [3]

Range: Weapon's engagement distances.

Damage: Damage caused by a weapon hitting an enemy each time.

Fire Rate: The length of time between each fire of the weapon. (RPM – Rounds per minute)

Ammo Capacity: The amount of spare ammo that can be carried and the capacity of the individual magazines of the weapons.

Accuracy: Accuracy refers to how accurately a weapon is fired.

2. Enemy System

Enemy Type	Attack Style	Movement	Attacks	Health
City Scanner	Melee	Fast	25	30
Barnacle	Melee	Static	10	35
Headcrabs	Melee	Medium	5	10
Fast Headcrab	Melee	Fast	5	10
Standard Zombie	Melee	Slow	10 - Claw swipe 20 - Double slash	50
Fast Zombie	Melee	Fast	10 - Leaping hit 6 - Double slash	50
Poison Headcrab	Melee	Slow	Venomous bit	35
Poison Zombie	Melee Throw Poison Headcrabs	Slow	20 - Slash	175
Antlion	Melee	Medium	5	30
Antlion Gurad	Melee	Medium	20 - Running head smash 10 - Headbutt	500
Combine Dropship	N/A	Fast Fly	N/A	4 RPG Hits
Civil Protection	Varies	Varies	Varies	26 40
Combine Gunship	Pulse cannon	Fast Fly	N/A	3 RPG Hits
Hunter-Chopper	Pulse cannon Deployable Bombs Guided Rocket	Fly	Varies	5600
Combine Soilder	Varies	Varies	Varies	50
Rollermine	Melee	Fast	10	N/A

Table 2 Enemy System Chart [3]

Attack Styles: Range from melee to heavy ranged attacks.

Movement: How fast the enemy moves

Attacks: The damage caused to the player by the enemy's attacks each time

Health: The damage limit that the enemy can withstand, which is corresponds to the "DAMAGE" of the "weapon."

3. Vehicle System

Vehicle Type	Attack Style	Overview	Movement
Airboat	Pulse Cannon (Originally None)	A boat introduced and must be used during the Chapter Route Kanal. It is unarmed at first, but is later retrofitted with a pulse cannon salvaged from a Hunter-Chopper	Very Fast
Buggy	Hit (Melee) and Tau Cannon (Long Range)	A vehicle that players must use to travel during Chapters *Highway 17* and *Sandtraps*	Very Fast

Table 3 Vehicle System Chart [3]

Gameplay Styles

Diverse combat methods

1. **The diversity of enemy types and the adaptive selection of weapons.**

   Half-Life 2 offers a variety of weapons, from close-range to long-range, from area damage to precise shooting, allowing players to freely switch weapons to target different types of enemies. Additionally, the limitations of different weapon ammunition will encourage players to frequently change weapons.

2. **The diversity of Level Design**

   Half-Life 2 offers maps of varying sizes that encourage players to adjust their weapon choices and the aggressiveness of their attacks.

Figure 7 Use a vehicle to run over enemies [4]

Figure 8 Fighting the enemy on a narrow walkway [4]

Physics-Based Interaction

1. **Puzzle Solving**

   Some space in Half-Life 2 requires the player to use some stuff in the environment to solve some puzzles, for example, in Chapter Route Kanal, the player need to stack objects at one end of the seesaw to lift it up, allowing players to walk on the seesaw and getting to higher place.
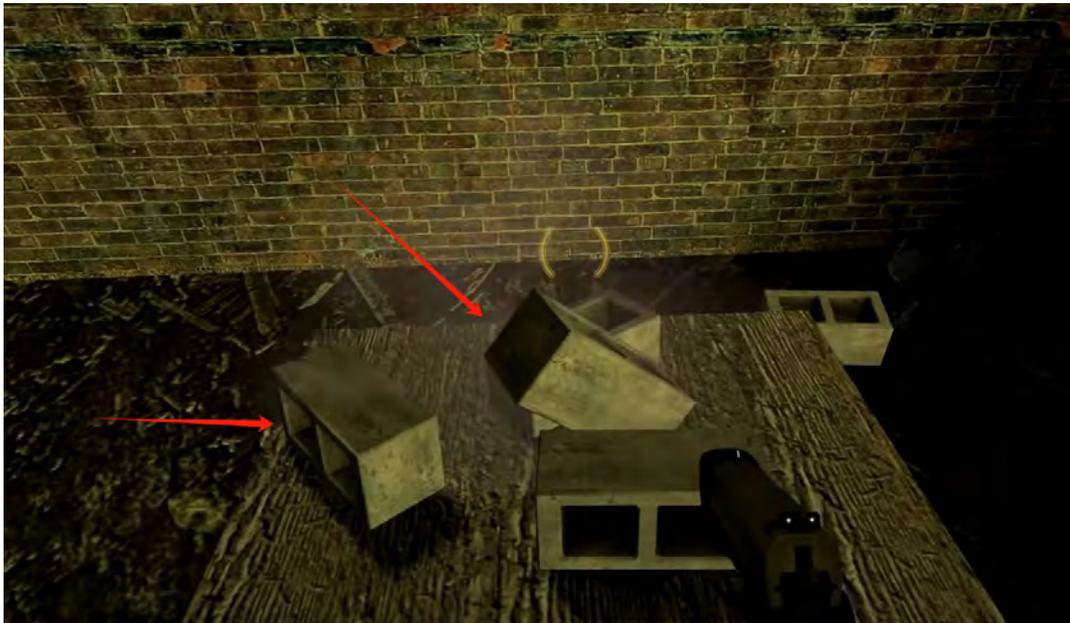

Figure 9 Use some props in the scene to solve the puzzle [4]

2. **Environmental Combat**

   After Introduced the Gravity Gun, the player can use stuff in the Environment as a Weapon. Like leveraging the Gravity Gun to manipulate objects for offensive and defensive purposes.

In some certain areas, the limited ammunition also prompts players to use environmental objects as weapons.

Figure 10 Use the Gravity Gun to manipulate objects in the scene for attacks [4]

Figure 11 Use the Gravity Gun to move objects in the scene [4]

Conveyances/Affordances

Landmarks

The game often uses landmarks in the distance to draw the player's eye and indicate the direction they should head to.

Figure 12 Combine Tower [4]

Visual Language – Lighting, Color and Shape

Important objects or pathways are often highlighted using contrasting colors to stand out from the environment. For example (Figure 11), the designer uses the cool color (color) in the end of the corridor to draw the players' attention and help them to navigate.

Figure 13 The Corridor [4]

Breadcrumbs

There are some items (Pickups, enemies) in the scene for attracting and leading the player to get to the correct direction.

Figure 14 The Sewer Scene [4]

Denying Affordance

Some obstacles are set up in the scene to inform the player where they should not go to.

Figure 15 The Obstacle [4]

Companion Characters

NPCs like Alyx Vance often accompany the player, physically leading them through complex areas. For example, for introducing some new weapons, Alyx may run ahead, encouraging the player to follow her to the next objective.

Figure 16 Alyx asks the player to follow her [4]

Feedback

Visual Feedback

Enemy Reactions

1. Enemy Hit Animation
   When the player successfully hits an enemy, visual cues such as blood, sparking or animations will indicate damage.
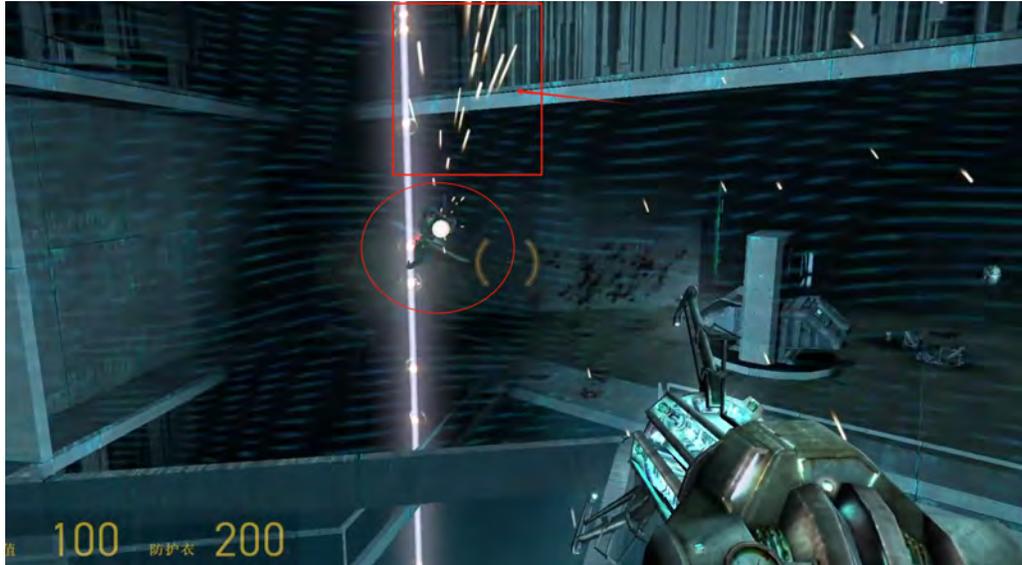

Figure 17 The Feedback for Enemies Hit [4]

2. Enemy Death Animations
   Enemies collapse or disintegrate upon defeat, confirming the player's successful attack.

Environmental Destruction

1. Breakable Objects
   Objects like wooden boards or barrels break apart when struck, indicating the player's action had an effect. At the same time, places with these objects also inform players that this path can be normally traversed after removing the obstacles.

Figure 18 Use Crowbar to clear the wooden board [4]

Audio

1. Sound Effects that show whether the player successfully interacts with objects in the scene.
2. Sound Effects that bullets hitting different objects is different, which allows the player to distinguish whether they hit an enemy or not.

User Interface

1. Damage Indicators (Red Screen Flash)

The screen edges flash red when the player takes damage, indicating the direction of the attack at the same time.

Figure 19 Red Screen Edges [4]

2. Health and Suit Status Indicator

    The number of players' health and suit decrease in response to damage, providing feedback.

References

[1] Jiafan LU. Screenshot of Microsoft Office Excel, 10 October 2024

[2] Jiafan LU. Microsoft Office Word Smart Art Flow Chart, 10 October 2024

[3] Jiafan LU. Microsoft Office Word Table, 20 October 2024

[4] Jiafan LU. Screenshot of *Half-Life 2*, 20 October 2024