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BA COMPUTER GAMES DESIGN

GAME THEORY & DESIGN

Adams & Rollings: Challenges



Ernest Adams and Andrew Rollings: Challenges

- The Hierarchy of Challenges
- Informing the Player About Challenges
- Intermediate and Simultaneous Atomic Challenges
- Game Examples - Steam Library

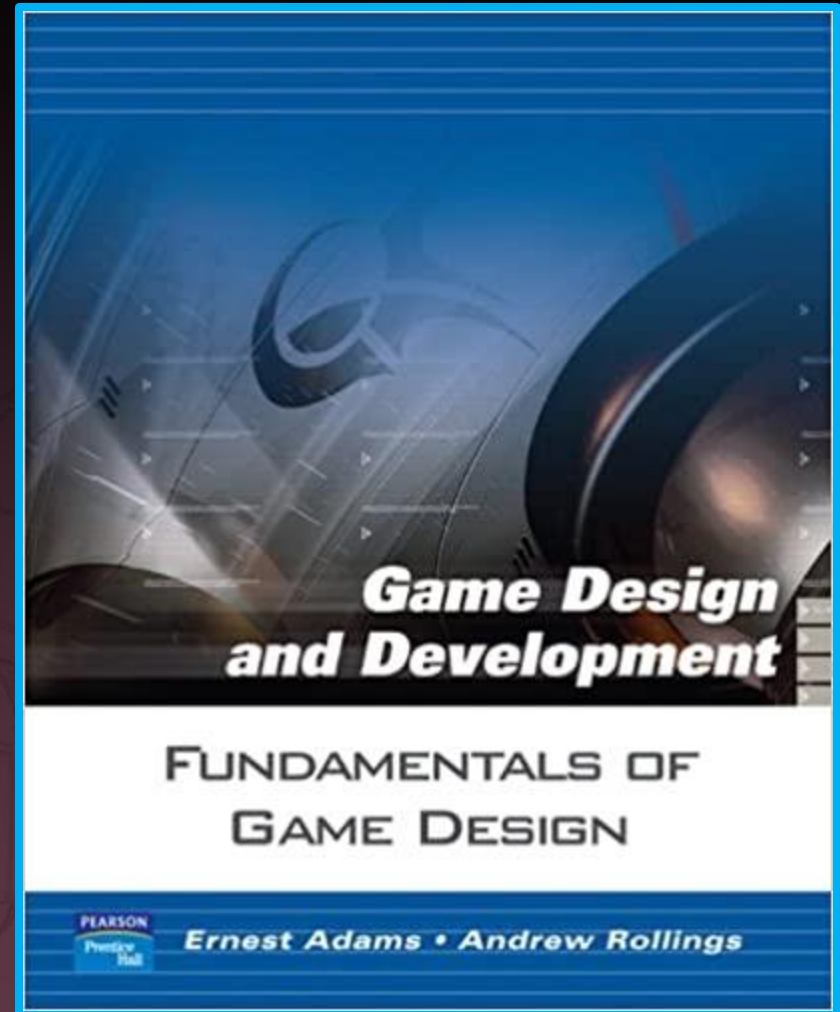


Further reading:

Gameplay, Challenges and Stress

Ernest Adams & Andrew Rollings, Fundamentals of Game Design

(Available in **Y Fforwm Library**, SA1)





Adams and Rollings: Fundamentals of Game Design

The Hierarchy of Challenges



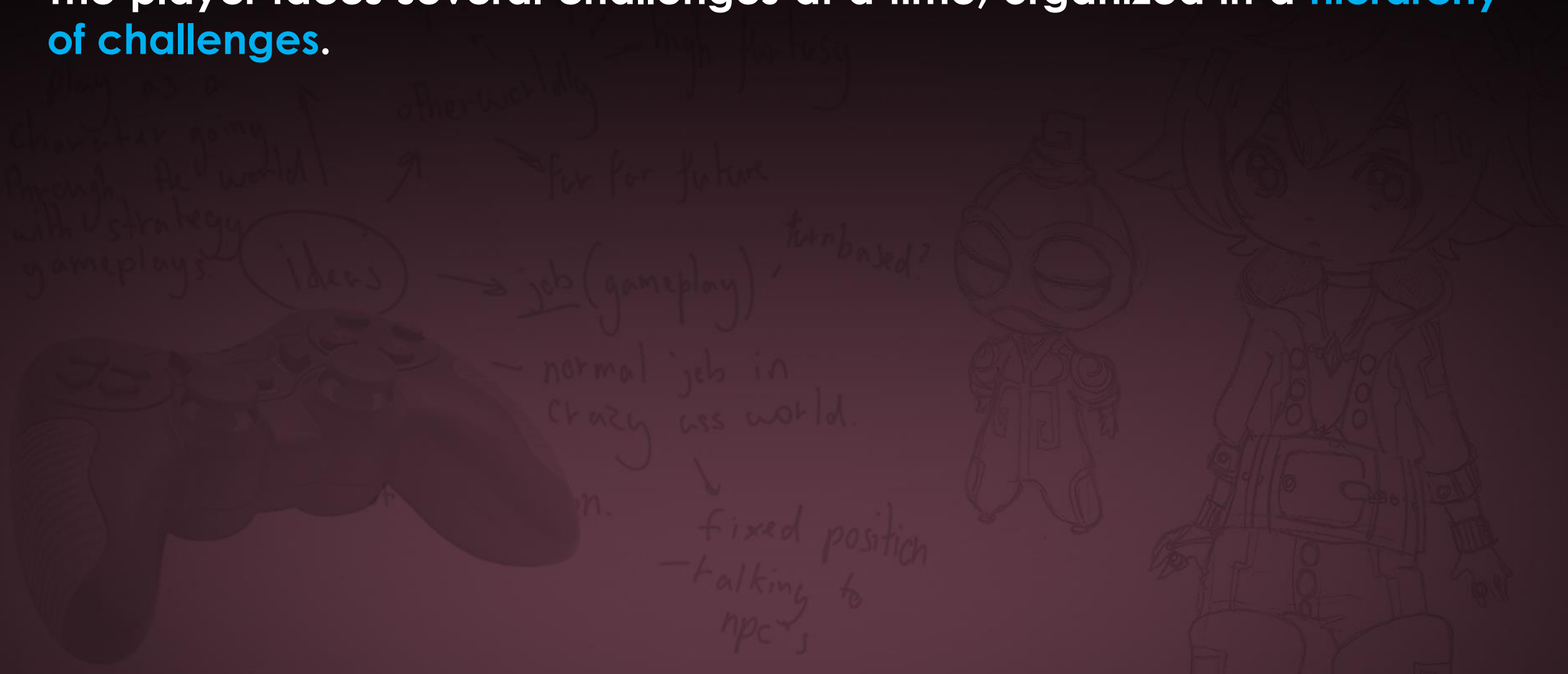
normal job in
crazy ass world.

fixed position
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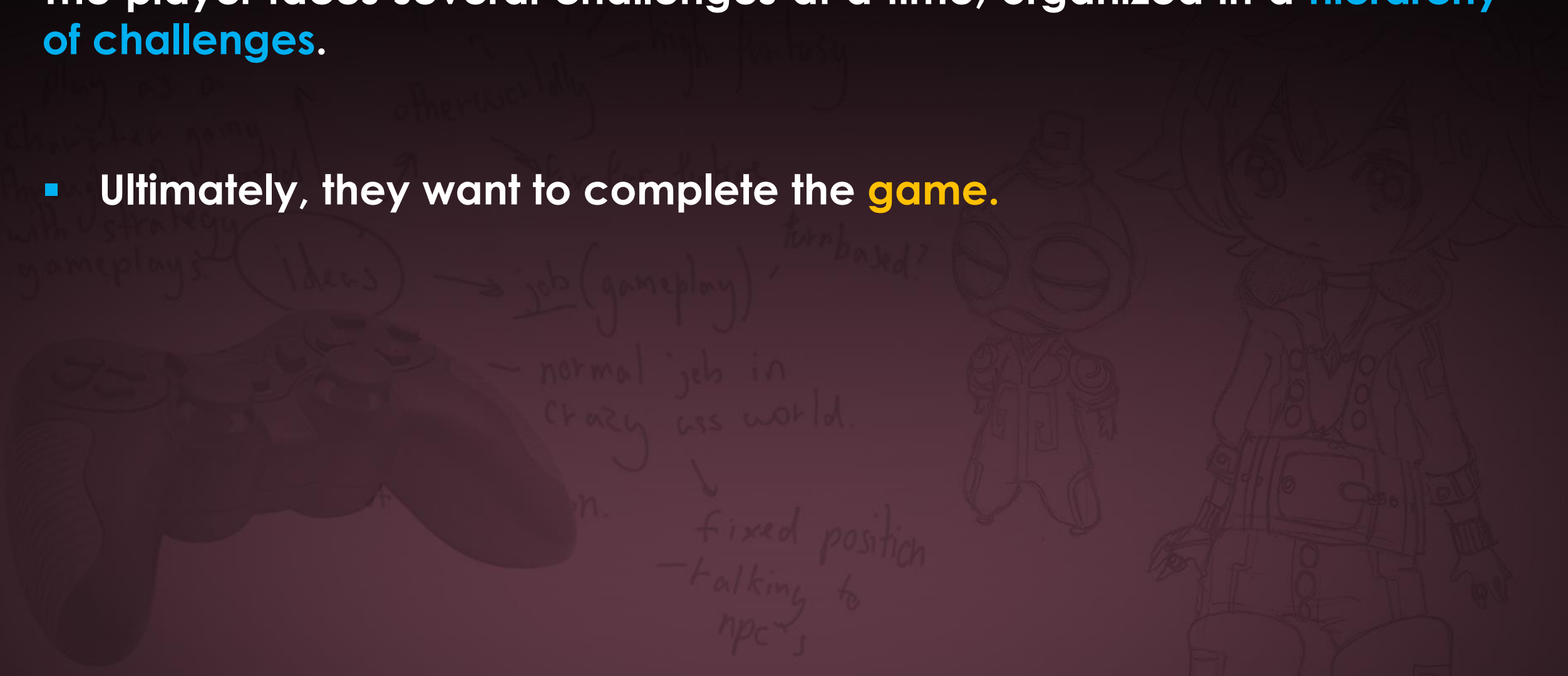
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- Ultimately, they want to complete the **game**.
- To accomplish this, they must complete the current **mission**.
- Completing the mission requires completing a **sub-mission**, of which the current mission probably has **several**.



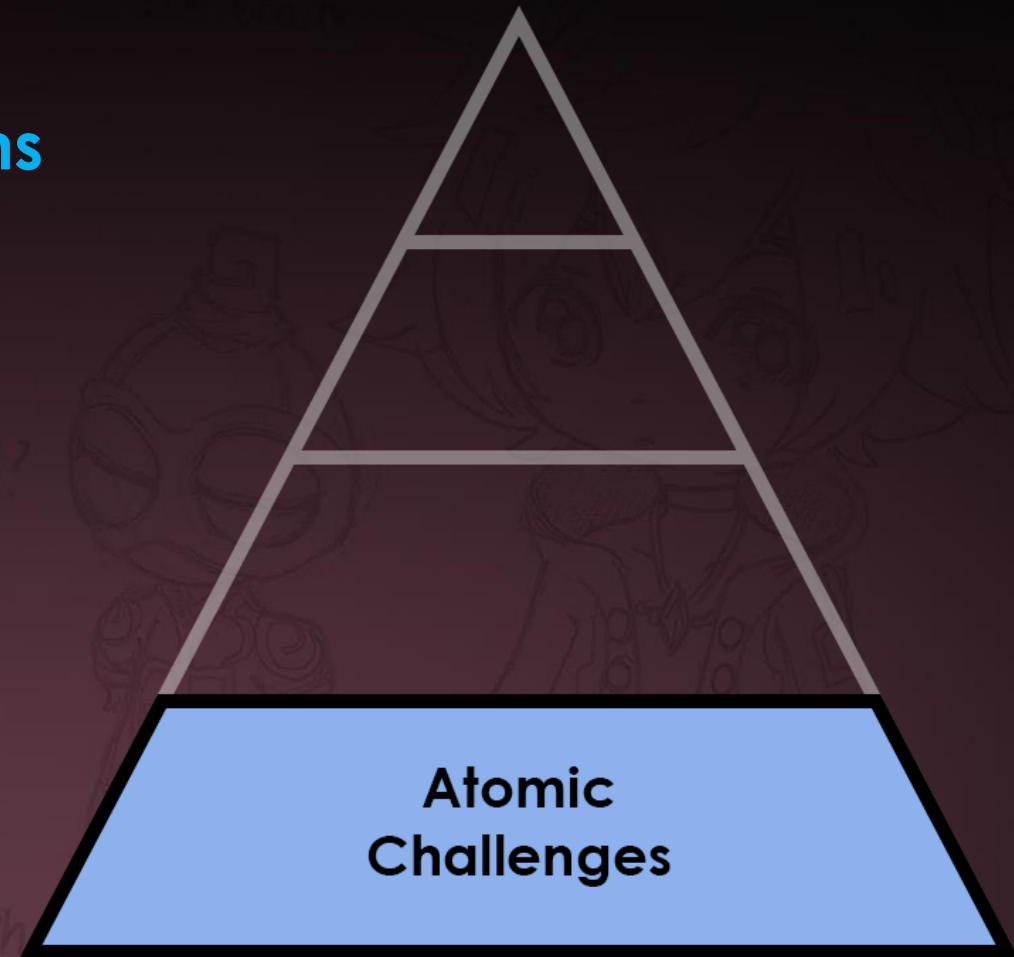
At the lowest level they need to deal with the challenge that **immediately** faces them.

Adams and Rollings refer to these as **ATOMIC CHALLENGES***.

(*atomic in the sense of indivisible)

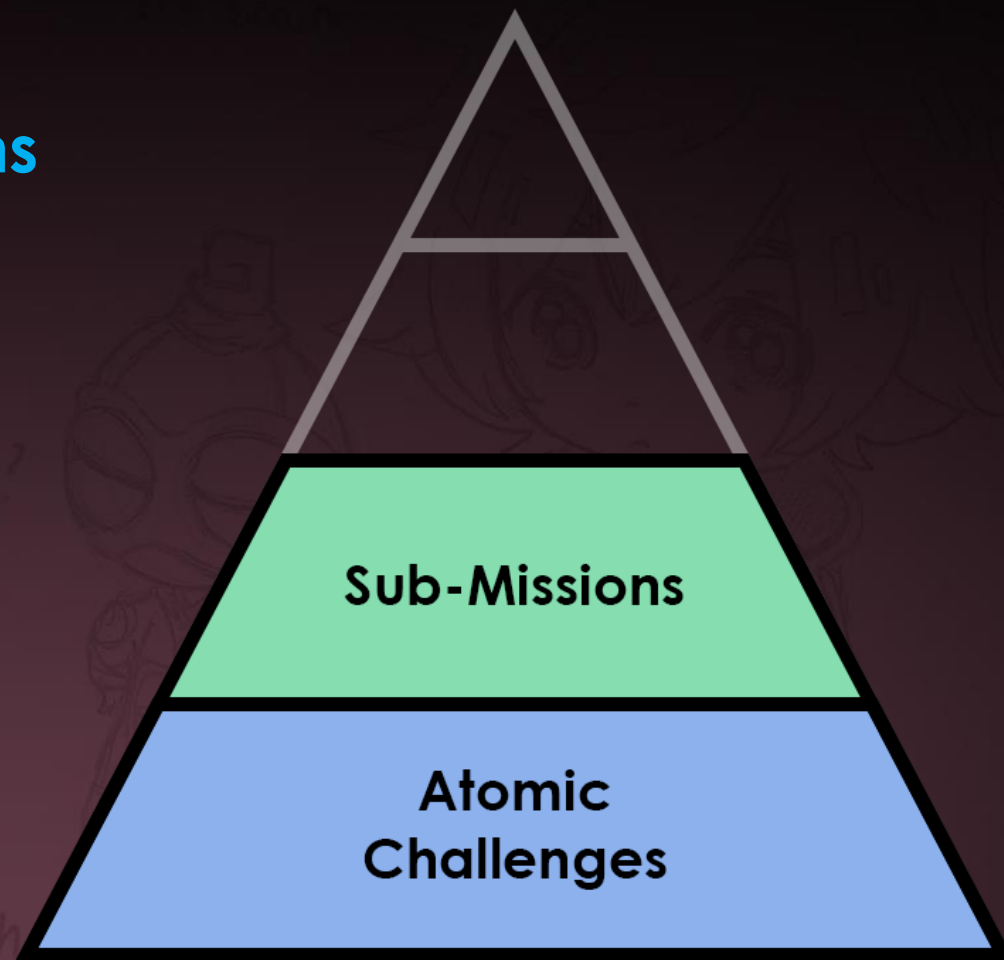


- **Atomic Challenges** make up sub-missions



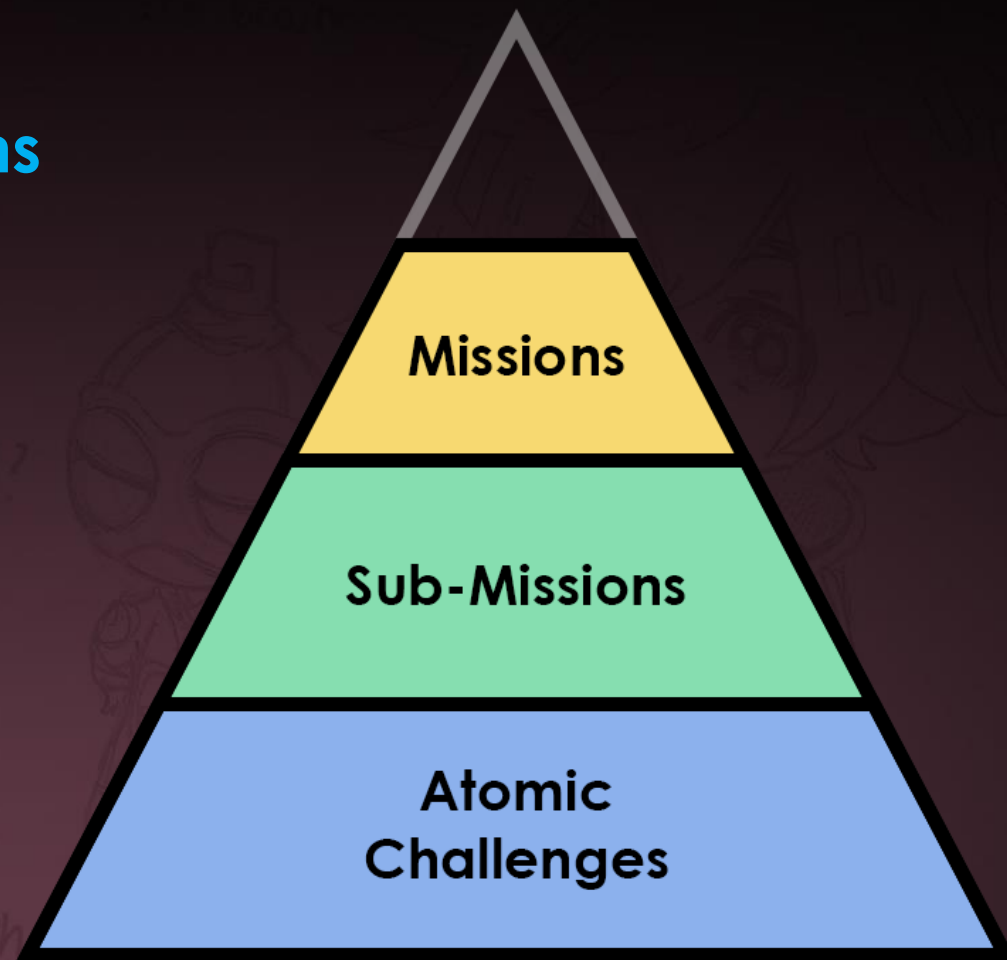


- **Atomic Challenges** make up **sub-missions**
- **Sub-missions** make up **Missions**



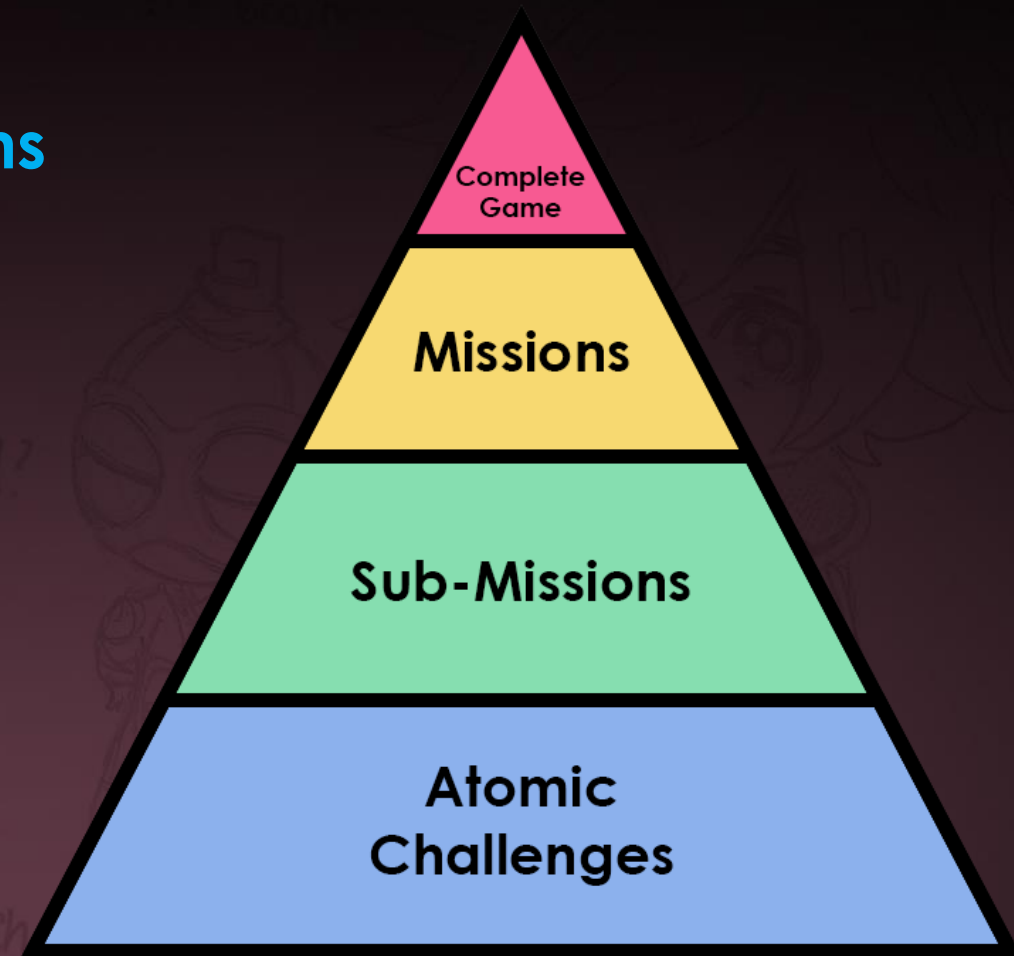


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- **Sub-missions** make up **Missions**
- **Missions** make up the ultimate goal: **Completing the Game.**

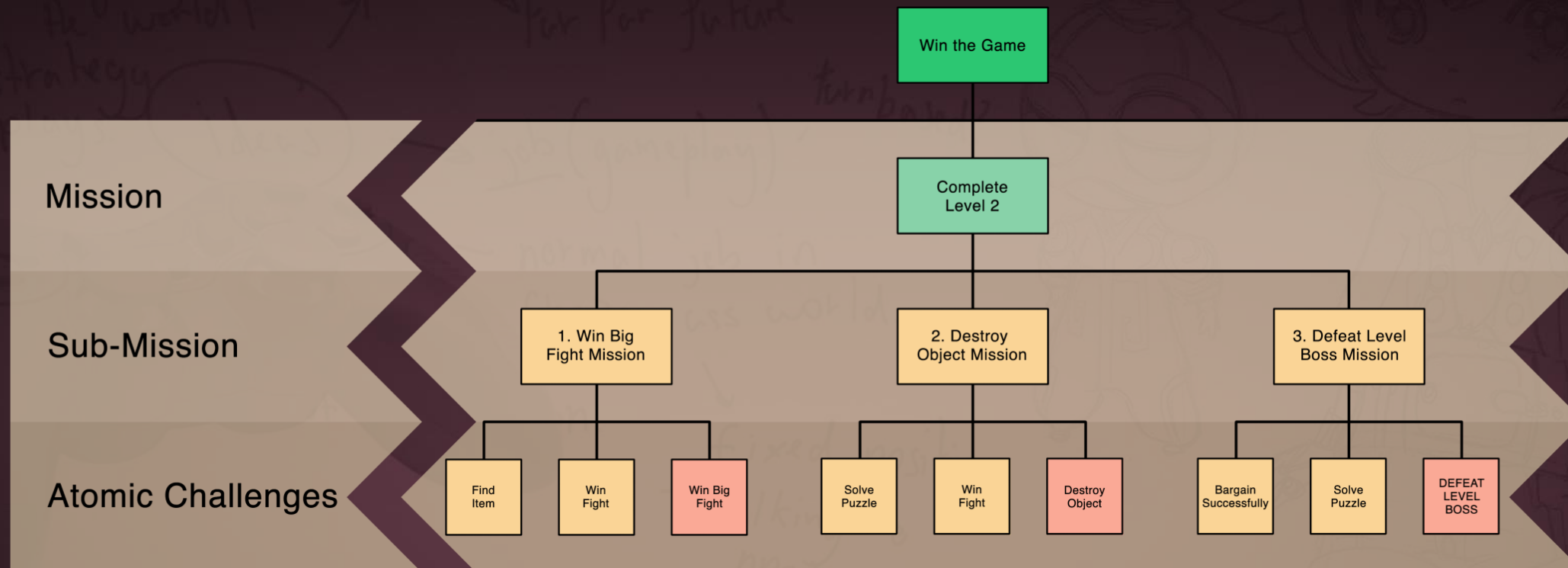
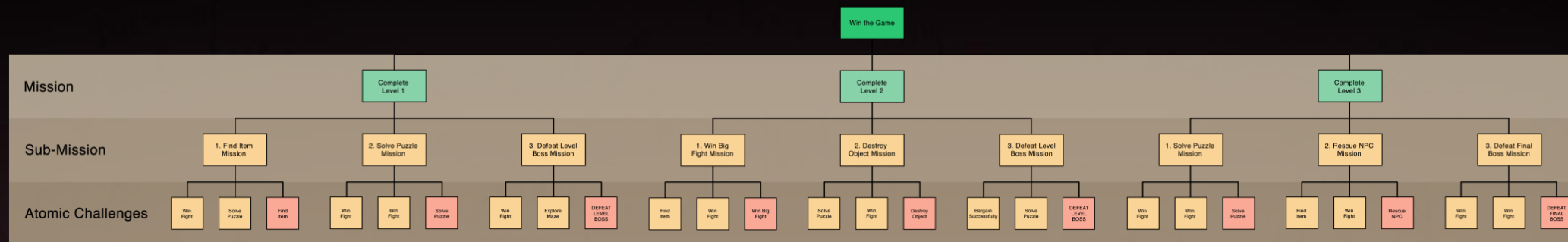




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Adams & Rollings: Challenges

The Hierarchy of Challenges

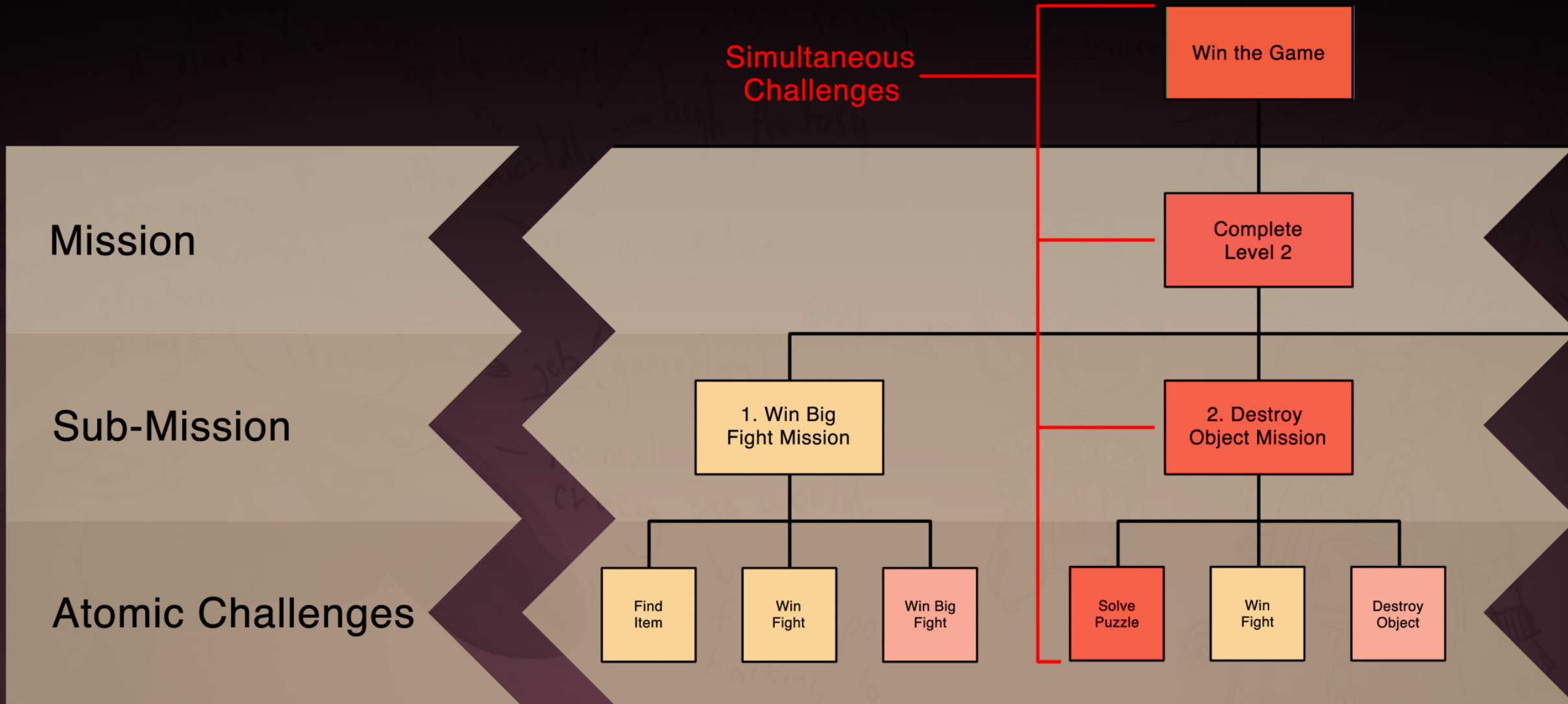




Adams and Rollings: Fundamentals of Game Design

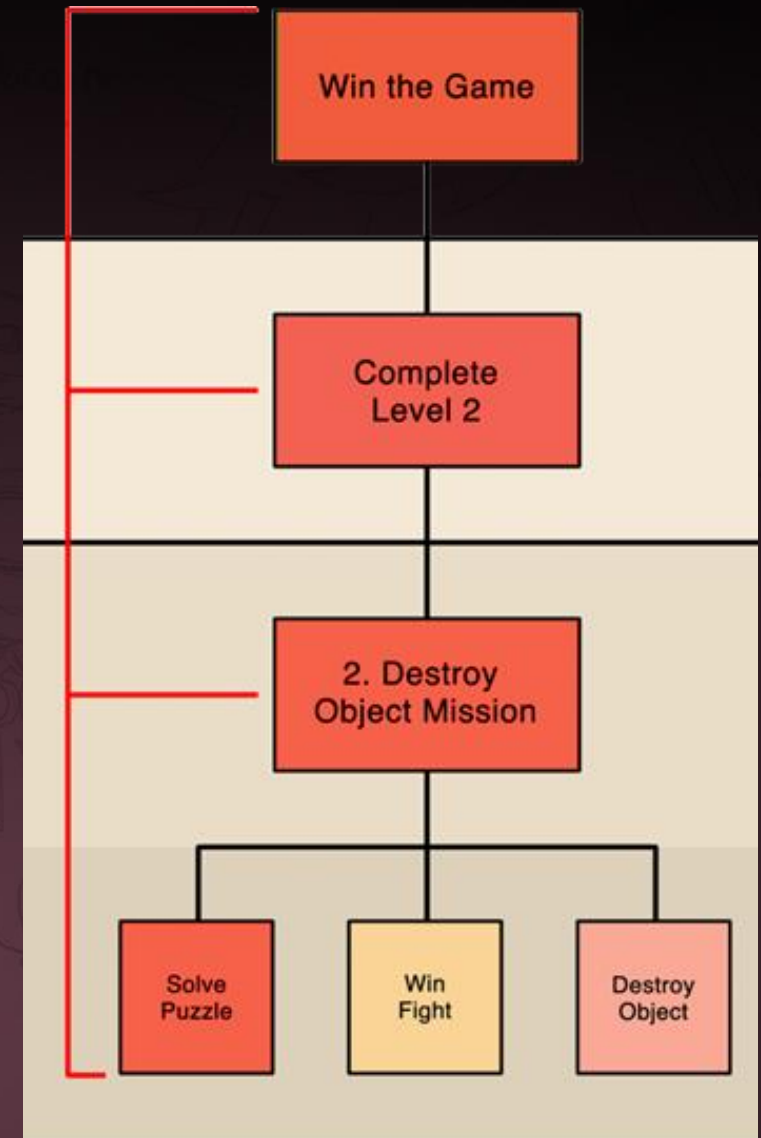
The Hierarchy of Challenges

Simultaneous Challenges



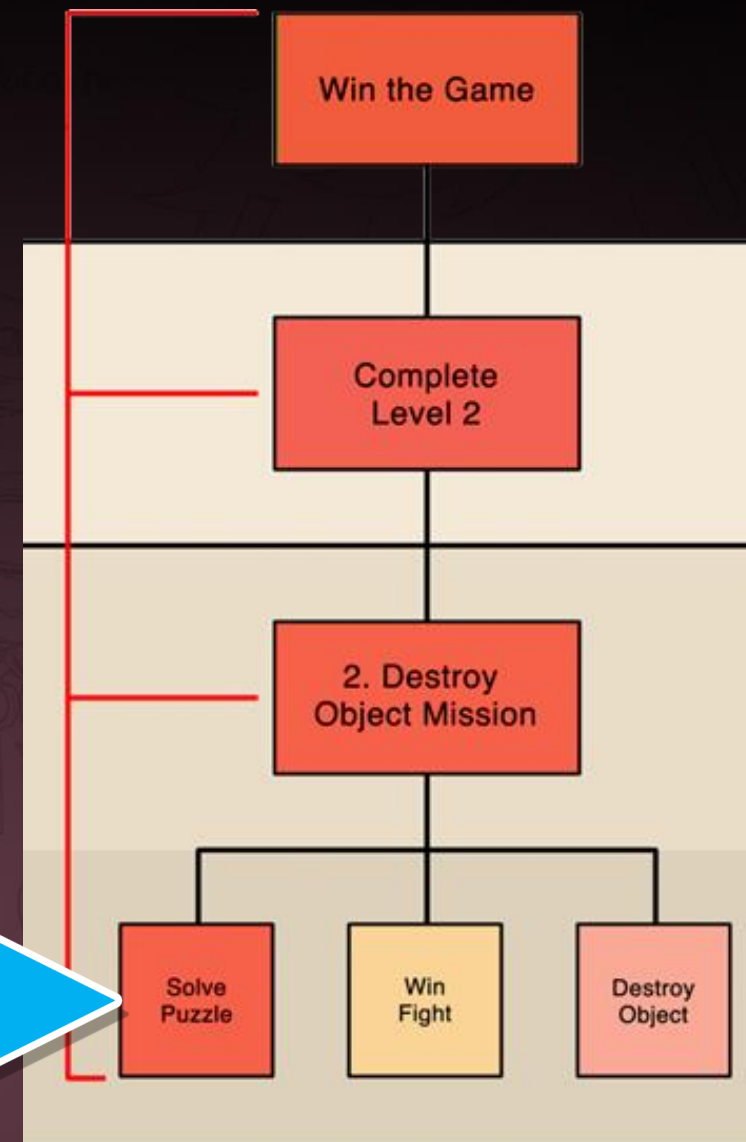


The highlighted boxes (here and on the previous slide) indicate the challenges the player faces **simultaneously at one particular moment** in the middle of Level 2.





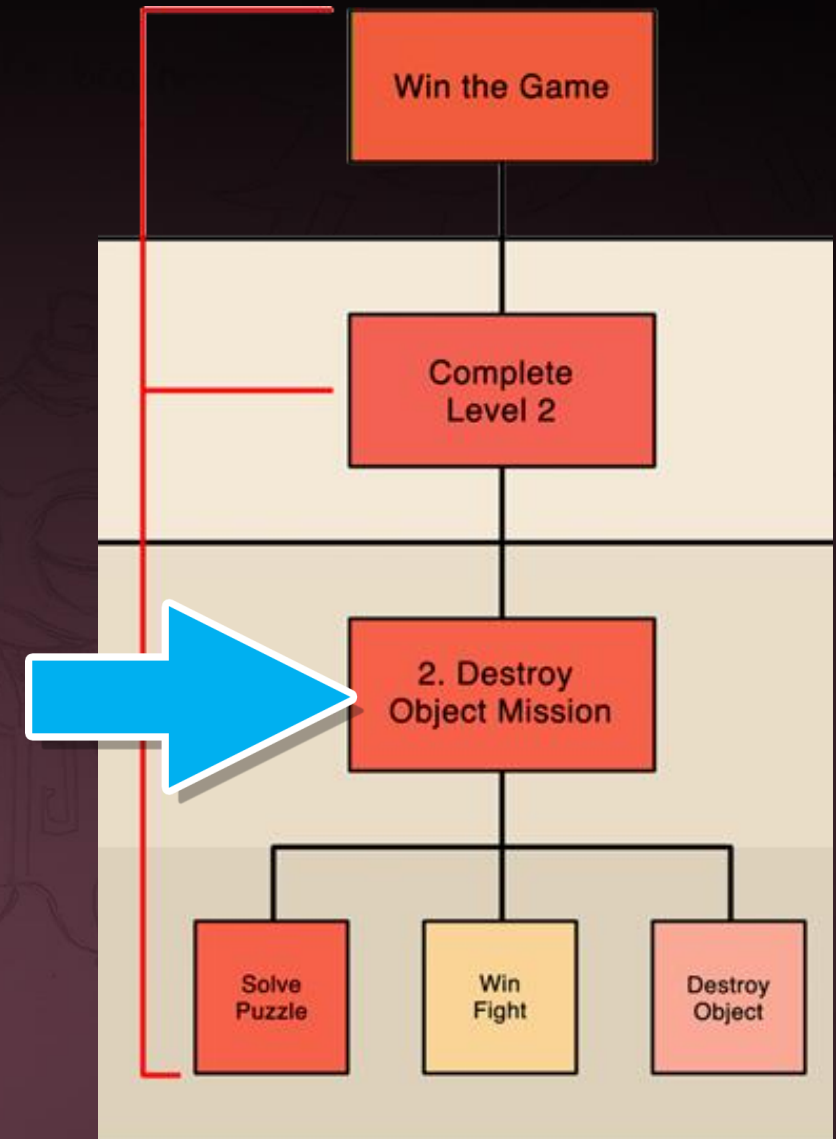
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Doing so will help them (or allow them to proceed to) **destroy the critical object**.

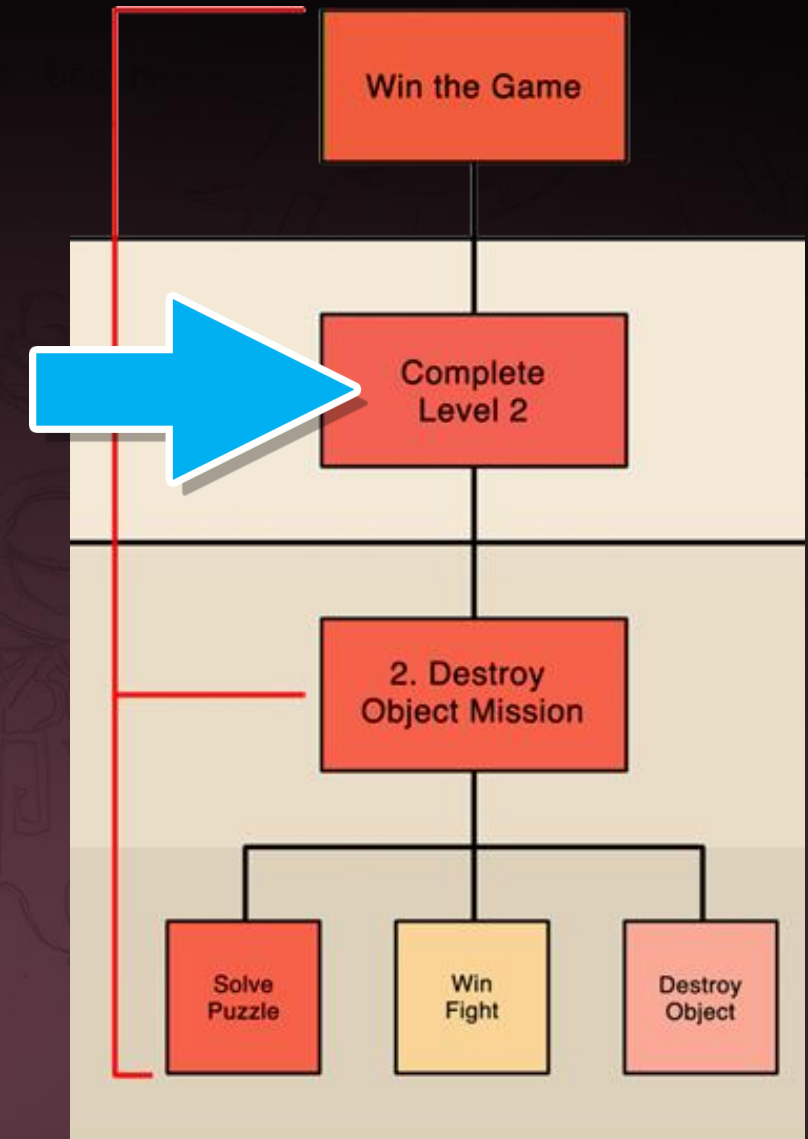




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All of the above contributes to succeeding in the **Destroy Object sub-mission**, which makes up part of **winning level 2**.



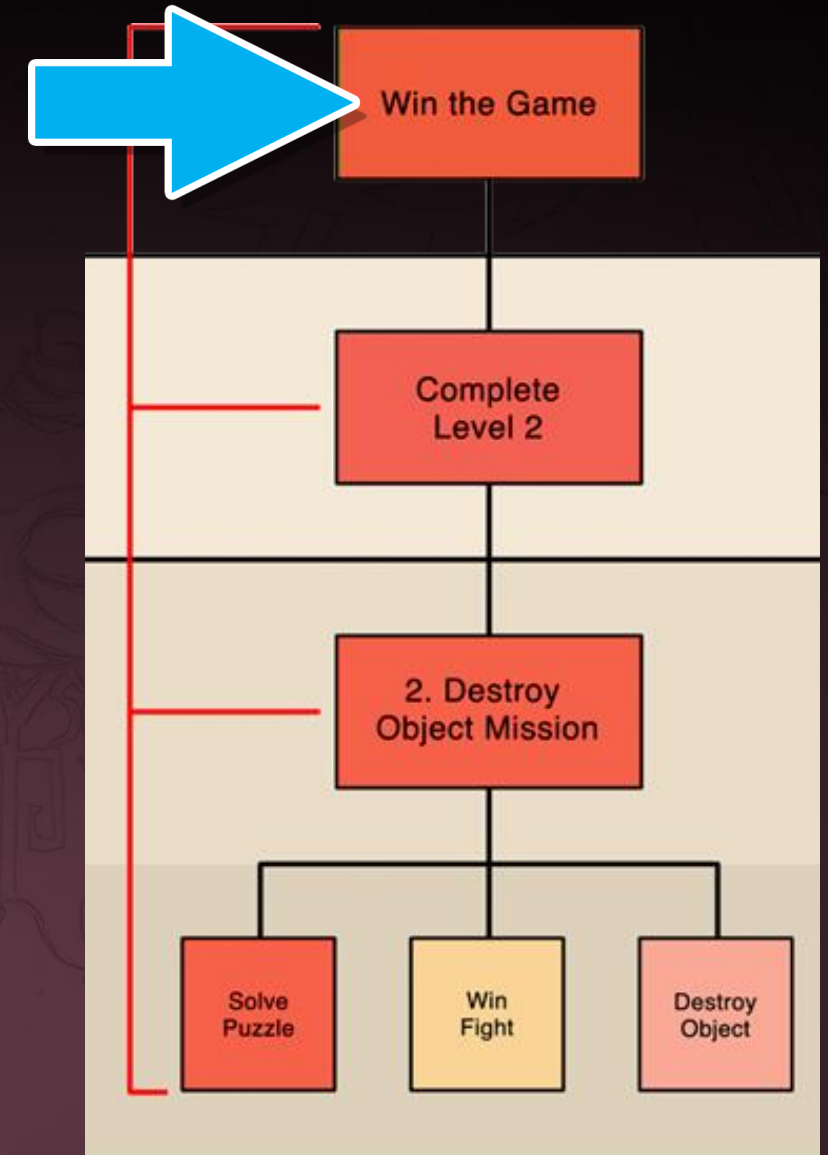


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All of the above contributes to succeeding in the **Destroy Object sub-mission**, which makes up part of **winning level 2**.

Ultimately, they are hoping to win the **entire game**.





To design your game you must create this hierarchy and decide what challenges the player will face.

During play the **player focuses most of their attention on the atomic challenges immediately facing them** but other higher-level challenges will always be at the back of their mind.



This awareness of the higher-level challenges from the player creates **anticipation** that plays an important role both in **entertaining them and guiding them to victory**.





Adams and Rollings: Fundamentals of Game Design

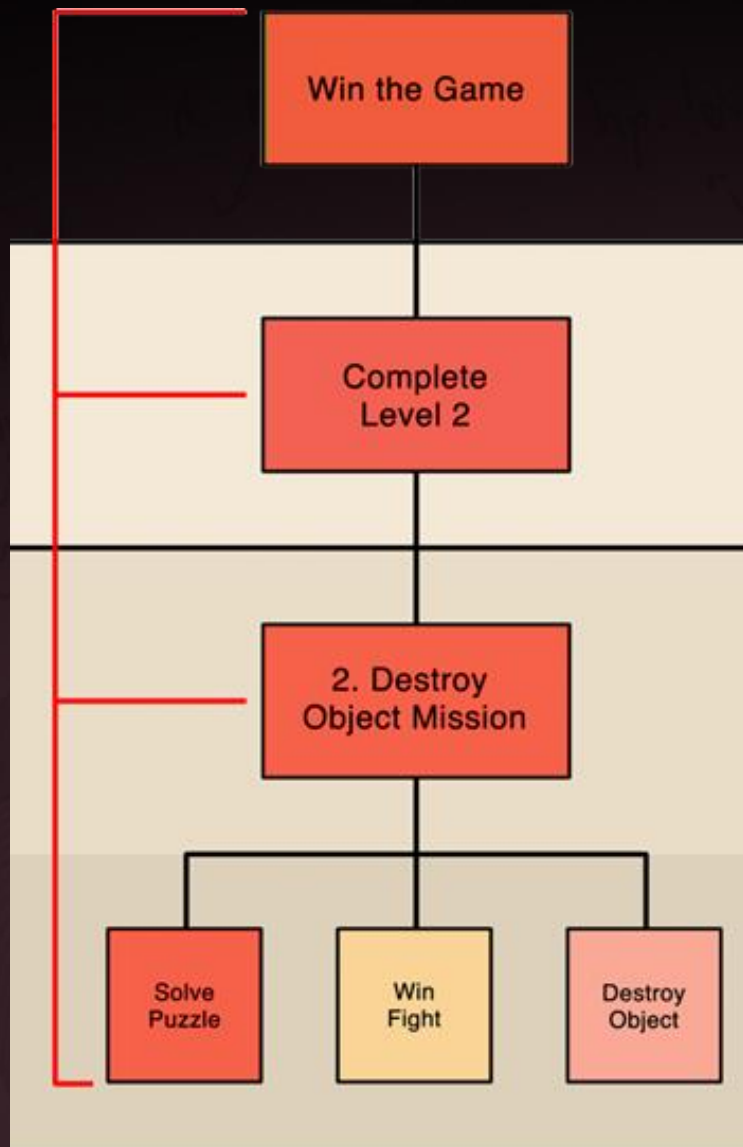
Informing the player About Challenges



normal job in
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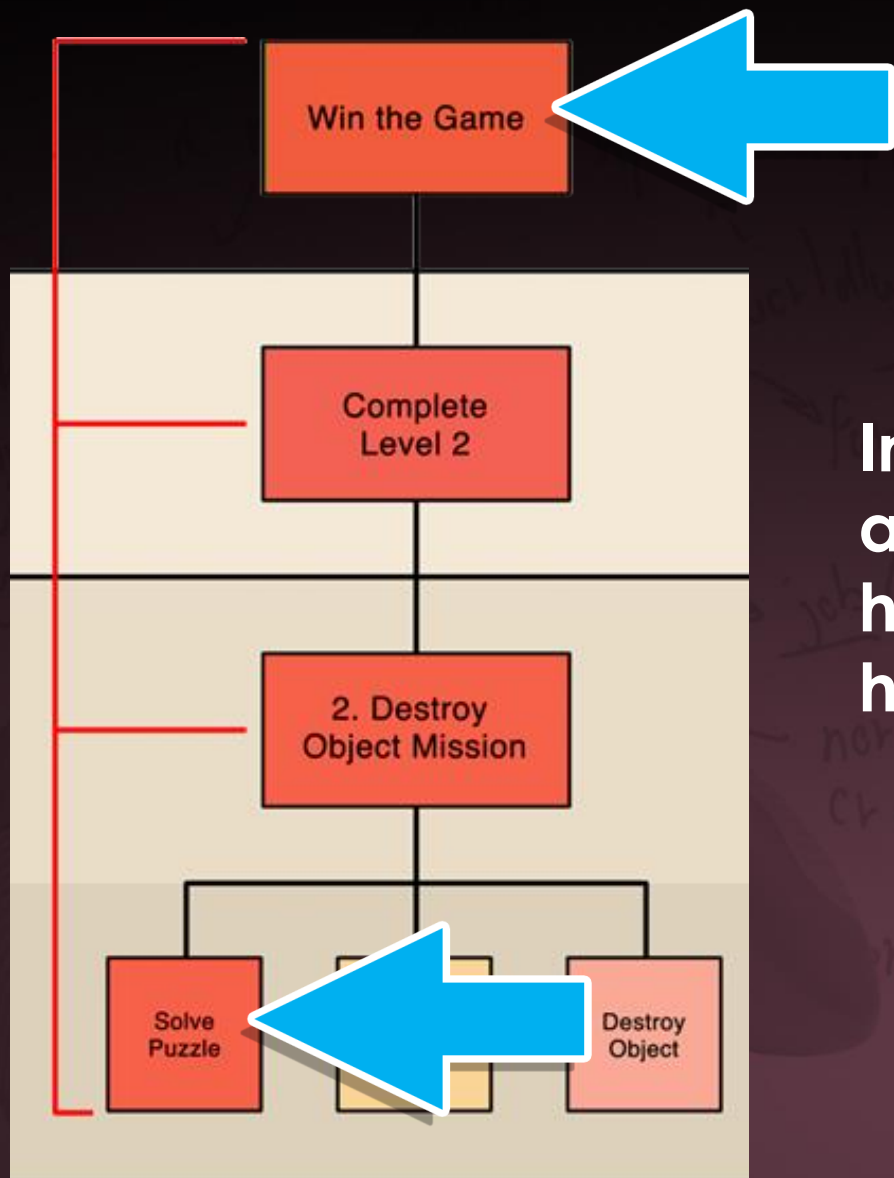


Video games normally tell the player directly about some challenges.

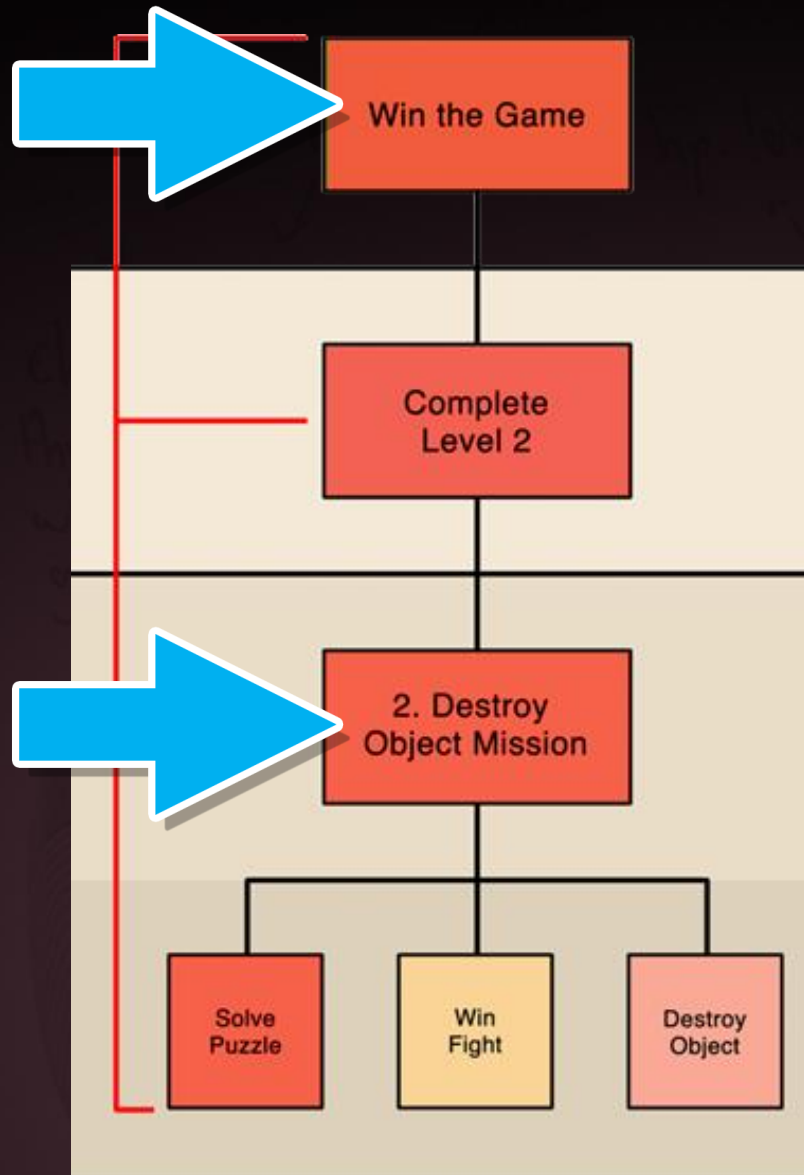
These are **EXPLICIT CHALLENGES**.

Others are left for the player to discover on their own.

These are **IMPLICIT CHALLENGES**.



In general, games give explicit instructions about the top and bottom levels of the hierarchy **but leave it to the player to figure out** how to approach the **intermediate** levels.



The **top level** includes the victory condition for the entire game.

Games tend to present their overall victory condition **explicitly**.

They may also state an explicit victory condition for **each level**.



Tutorial levels

Tutorial levels / scenarios often teach the player explicitly how to meet the **atomic challenges**.





Tutorial levels

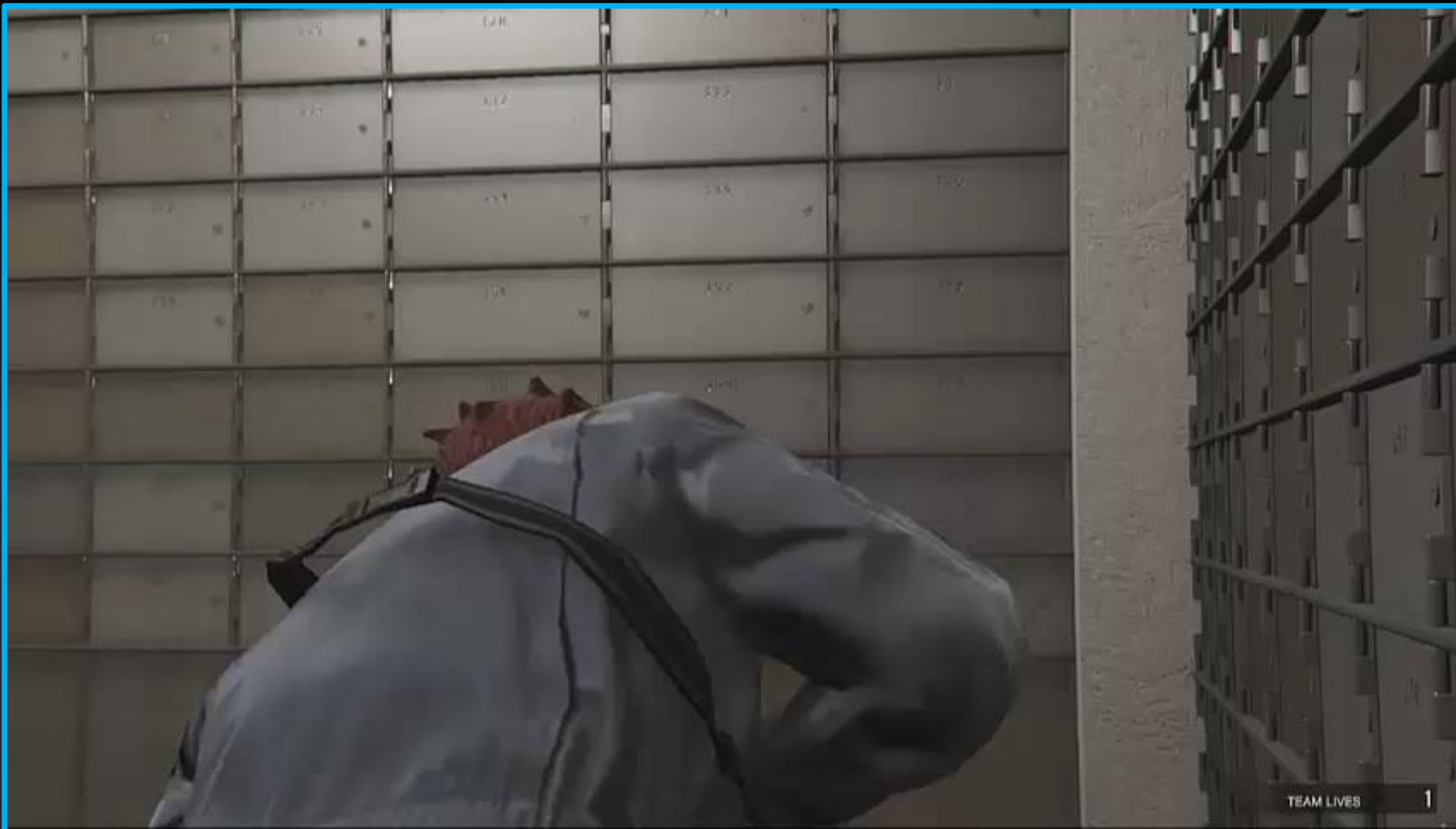
Unless you provide completely self-explanatory gameplay and controls, you should **always include one or more tutorial scenarios** in your game or an **explanation of the controls and how to use them** to meet atomic challenges.



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Adams & Rollings: Challenges

Informing the Player About Challenges





You should **always** tell the player about the victory condition or they **won't know what they are trying to accomplish.**

Be sure that the player gets whatever information they need to *think* they clearly know the victory condition so they are **never left without any motivation.**





“Make the *victory condition* and the *atomic challenges* explicit.

Be sure the player always has some overreaching goal in mind toward which they work. *Never leave them without a reason for continuing to play.*”

(Adams & Rollings, (2007: 281)



Adams and Rollings: Fundamentals of Game Design

The Intermediate Challenges



Most designers leave intermediate-level challenges **implicit**.

Part of the player's fun lies in figuring out what they are supposed to do.

If you give the player nothing to do except follow instructions, the experience doesn't feel like a game.



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Part of the player's fun lies in figuring out what they are supposed to do.

If you give the player nothing to do except follow instructions, the experience doesn't feel like a game.

It feels like a test.



Armed with the knowledge of both the **victory condition** at the top and the right way to meet the **atomic challenges** at the bottom, the player has the tools to figure out the intermediate challenges.

However, this does require the intermediate challenges to be constructed **coherently**!



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Adams & Rollings: Challenges

The Intermediate Challenges



Streets of Rage 2 (SEGA, 1992)



C&C: Red Alert 2 (Westwood Studios, 1998)

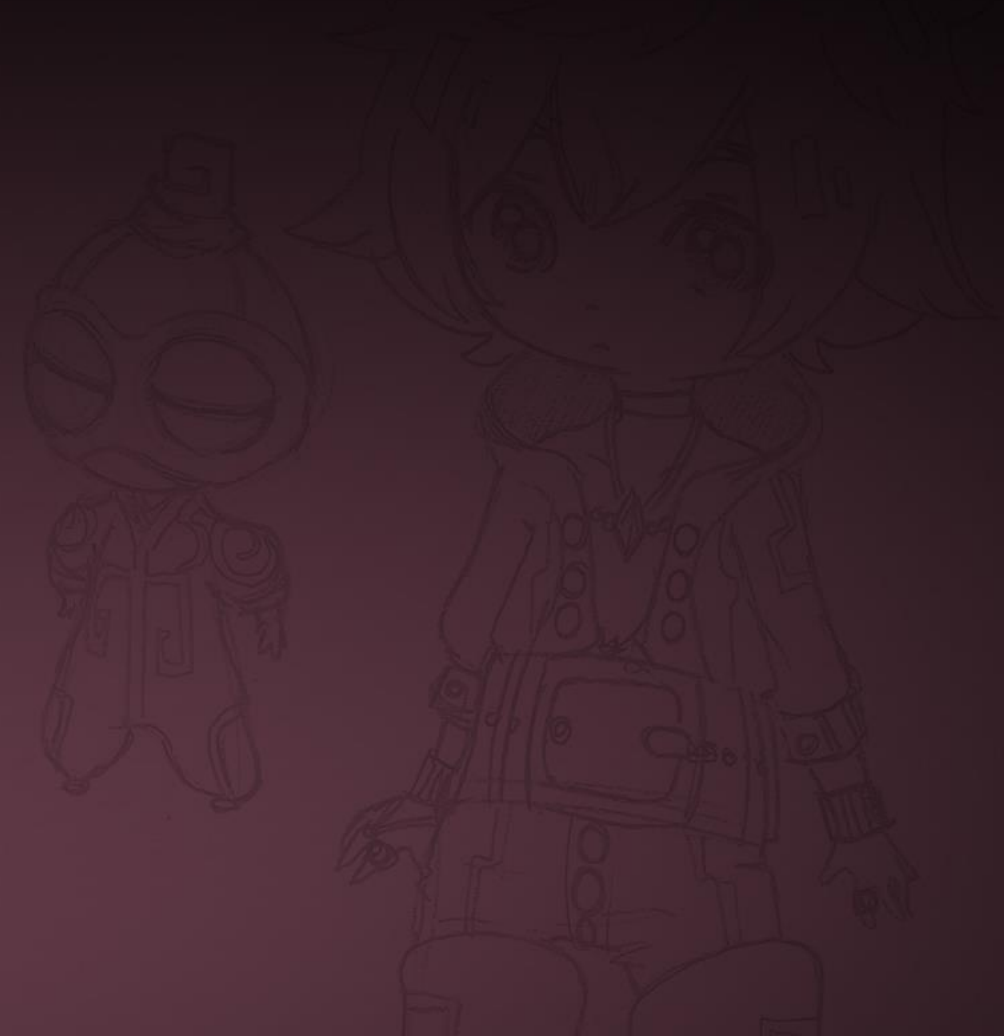
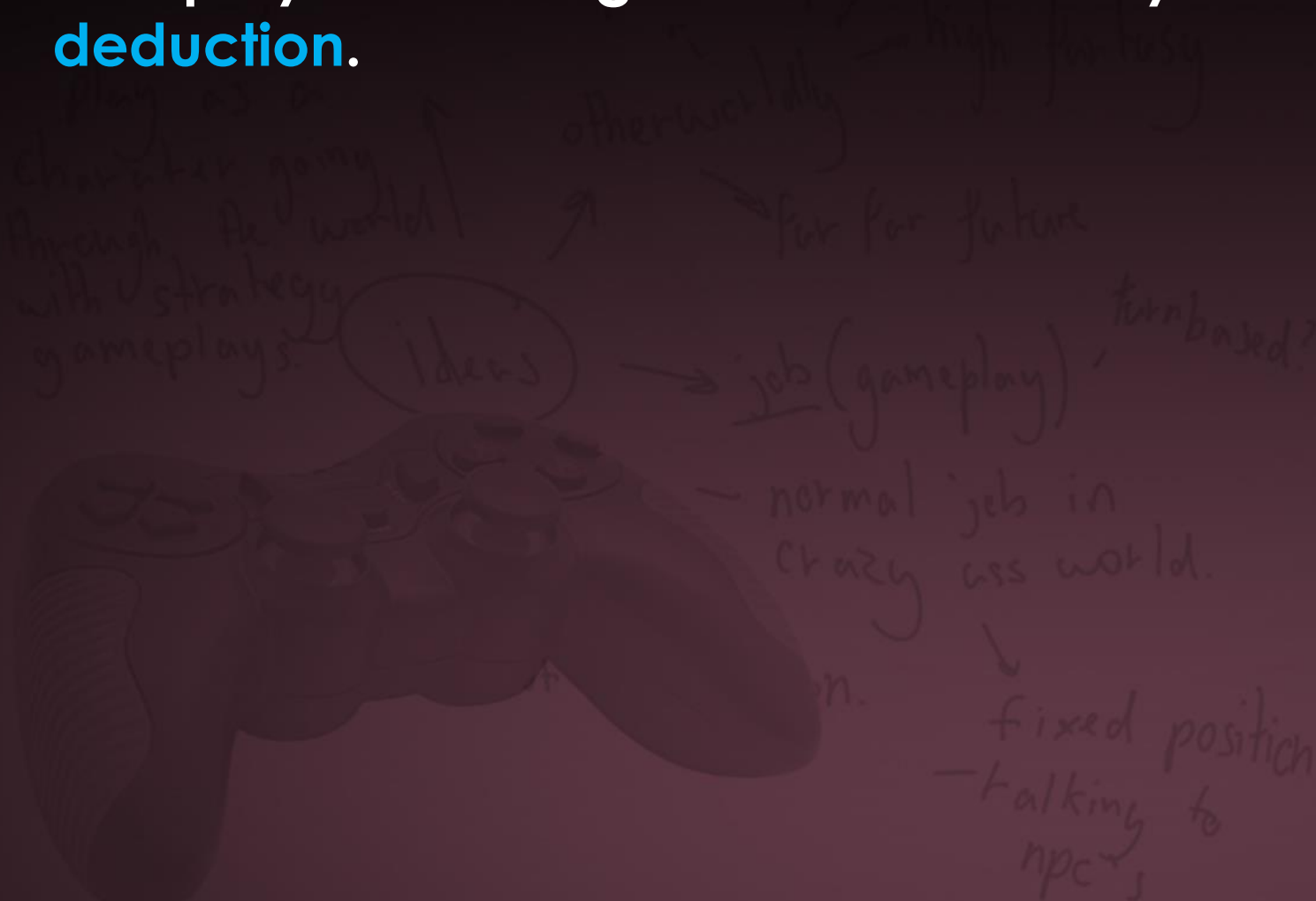


In Command & Conquer, neither the specification of the victory condition nor of the atomic challenges explicitly includes the intermediate-level challenge of ***disrupt the enemy's production system***.

Players protecting their own production system doesn't destroy enemy units at all.



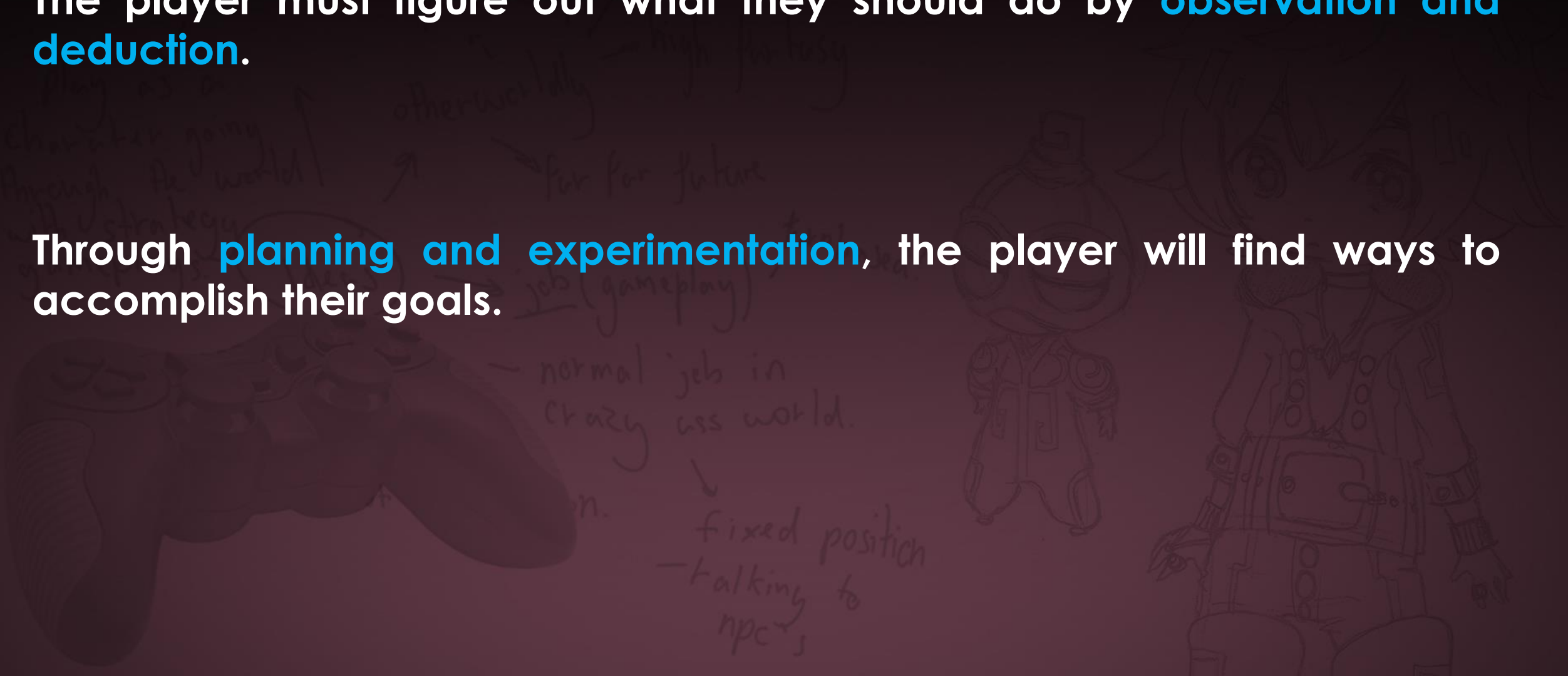
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Through **planning and experimentation**, the player will find ways to accomplish their goals.

The observation, deduction, planning and experimentation all add to the fun.



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Adams & Rollings: Challenges

The Intermediate Challenges



The most interesting games offer multiple ways to win

To give your player a richer experience, design your game so that they can win in a **variety** of ways.



Meeting **different** intermediate challenges will still get them to victory.



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Adams & Rollings: Challenges

The Intermediate Challenges



The most interesting games offer multiple ways to win

Different strategies may be better or worse but if you only permit one right way to win, you don't reward the player's lateral thinking skills.

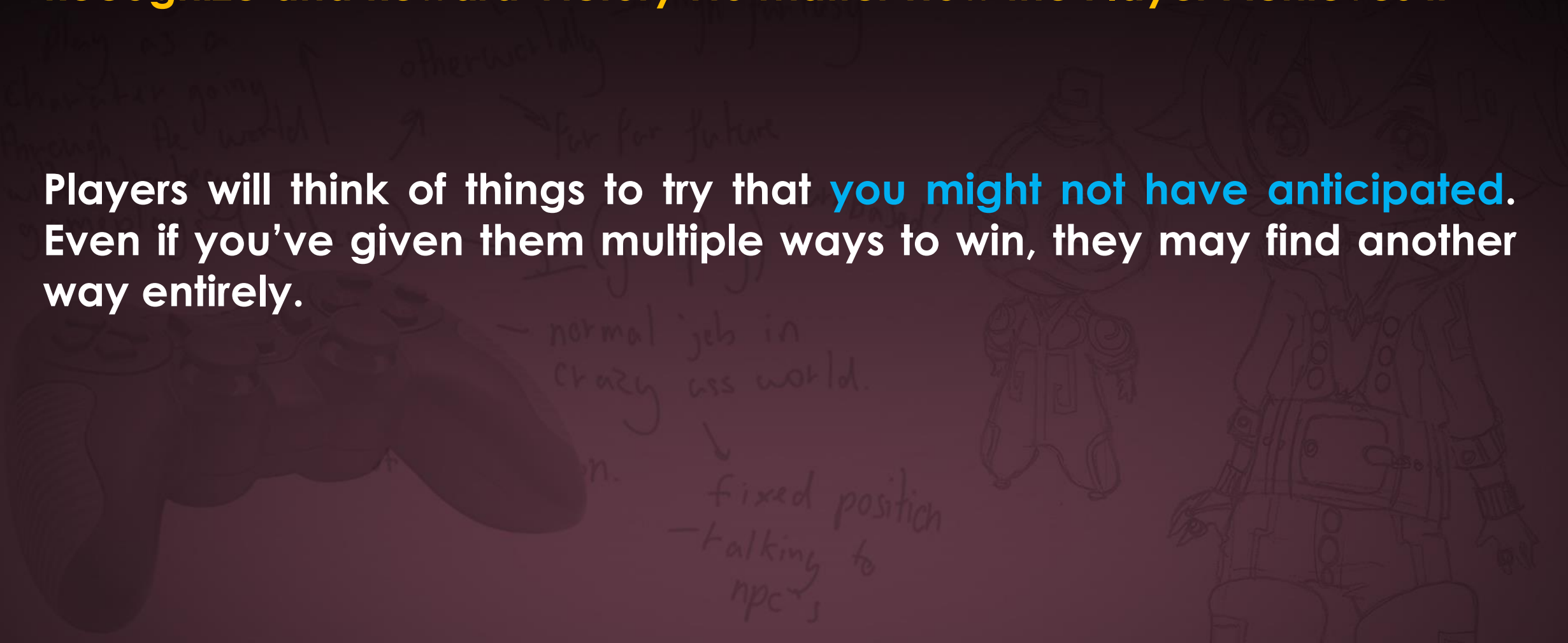


The game becomes an exercise in reading the designer's mind.



Recognize and Reward Victory No Matter How the Player Achieves it

Players will think of things to try that **you might not have anticipated**. Even if you've given them multiple ways to win, they may find another way entirely.





Recognize and Reward Victory No Matter How the Player Achieves it

If the player achieves the victory condition, even in a completely unexpected way, **they deserve credit for it.**

Don't test to see if they got there in one of the ways that you intended – just test to see if they got there.



Recognize and Reward Victory No Matter How the Player Achieves it

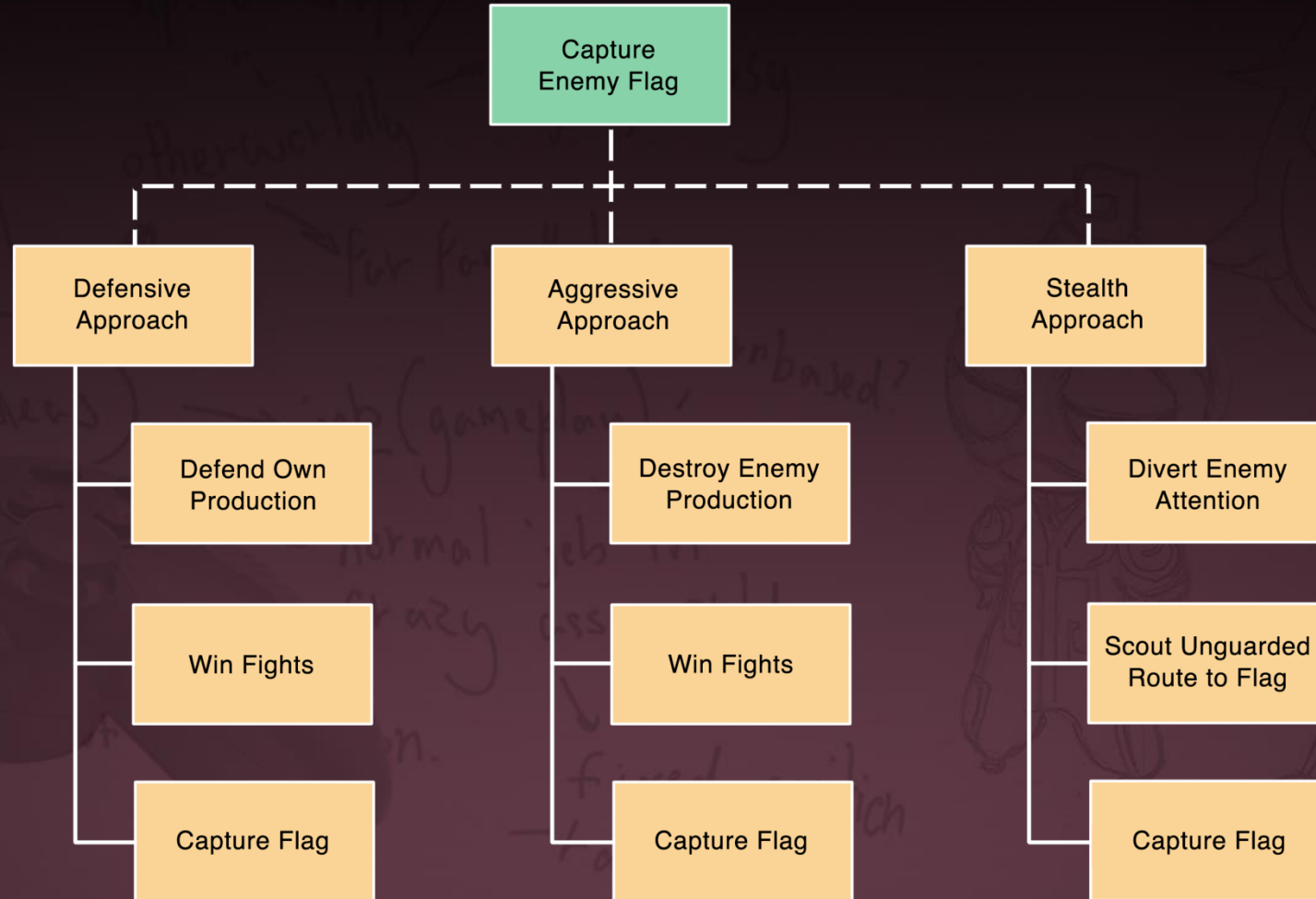
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Remember, these mid-level challenges are **IMPLICIT CHALLENGES.**



Multiple Choice: War Game Example





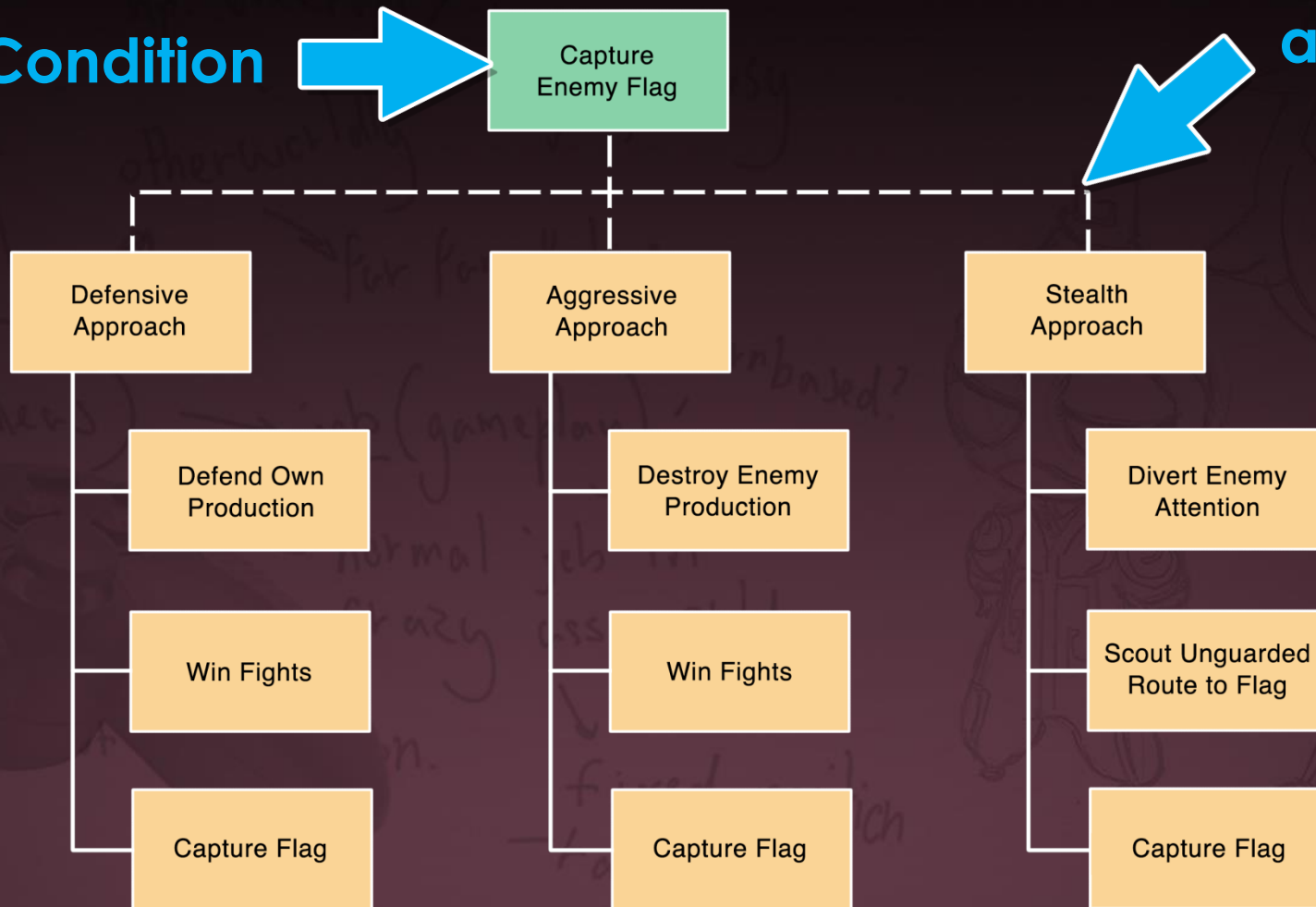
Multiple Choice: War Game Example

Victory Condition



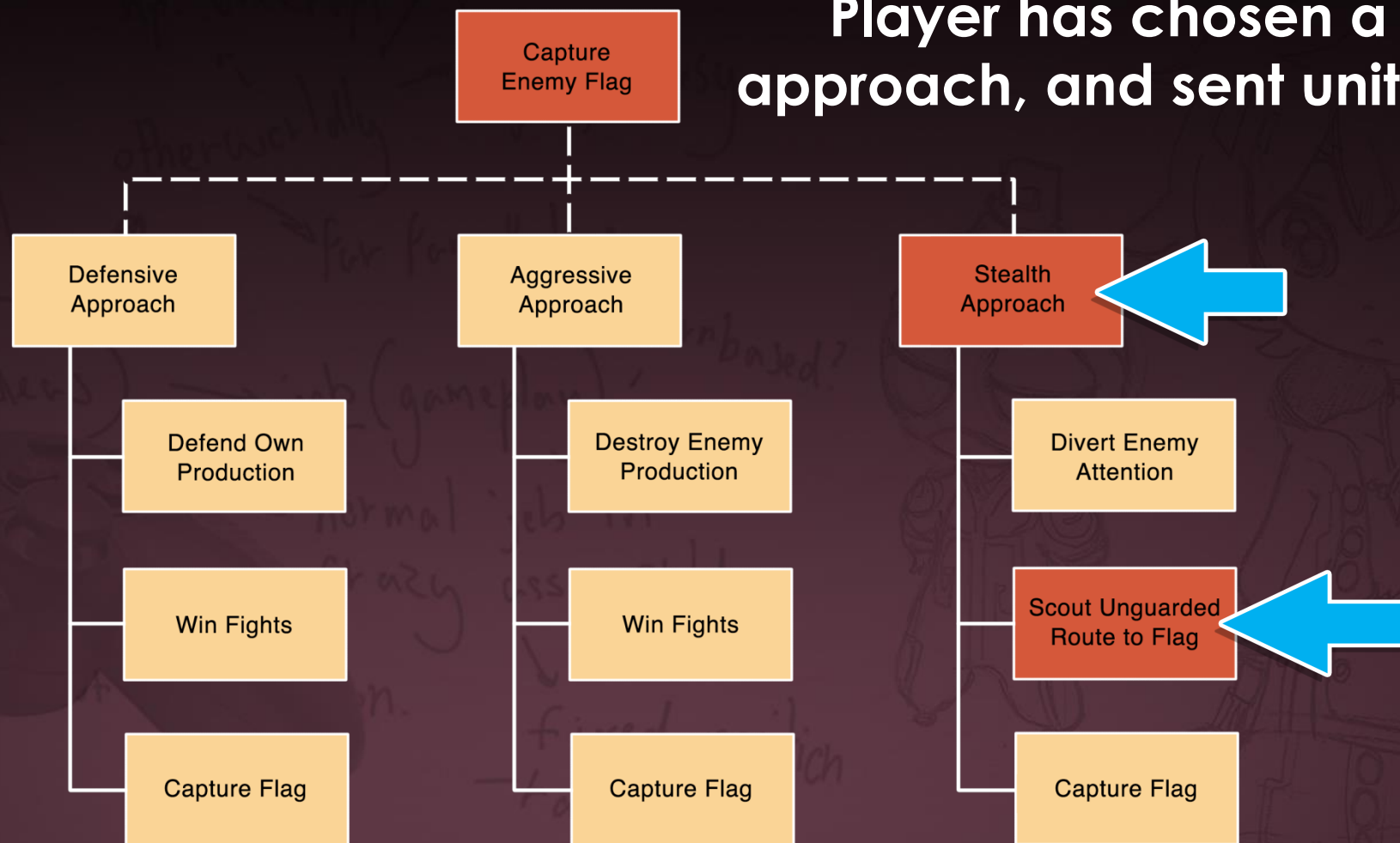
Capture
Enemy Flag

**Possible choice of
approaches**





Multiple Choice: War Game Example



Player has chosen a **STEALTH** approach, and sent units to SCOUT.



Adams and Rollings: Fundamentals of Game Design

Simultaneous Atomic Challenges



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fixed position
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Games can also present **several atomic challenges at once**.





Games can also present **several atomic challenges at once.**

These divide the player's attention.





If they have to surmount all of them in a limited amount of time, then adding simultaneous challenges makes the game more **stressful**.







It's part of your job to **design the hierarchy of challenges** and decide how many of them the player will face at once.

The more **simultaneous atomic challenges** they face under time pressure, the more **stressful** the game will be.





Ernest Adams and Andrew Rollings: Challenges

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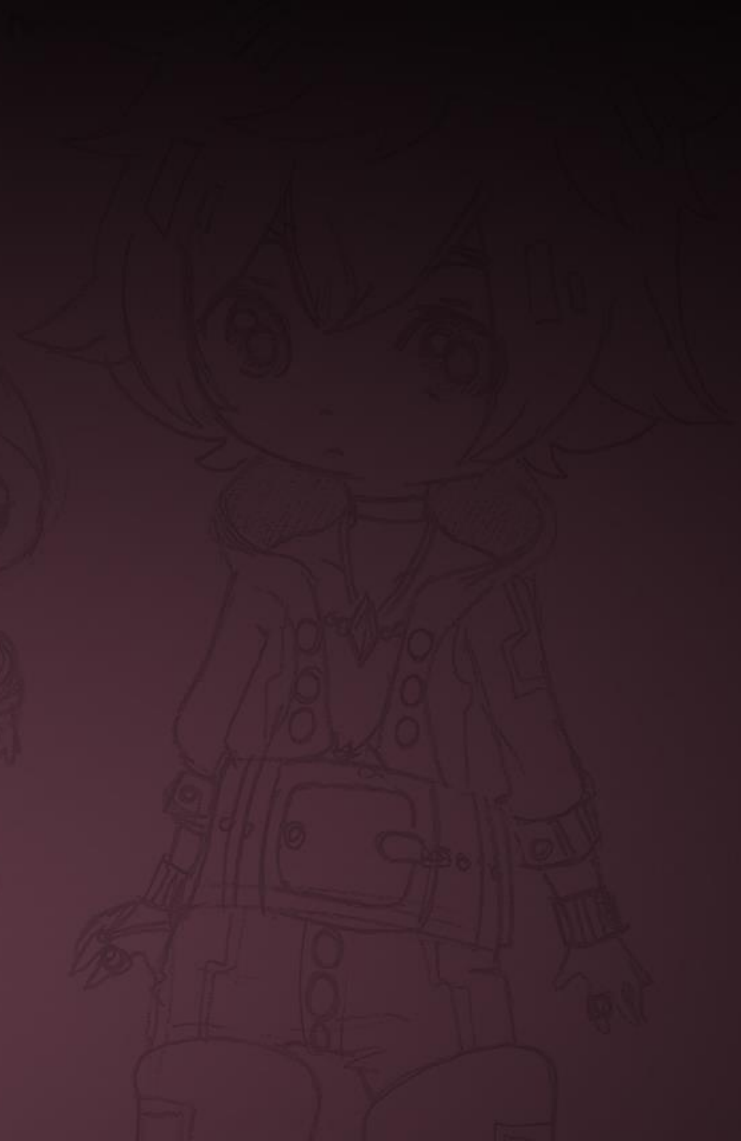
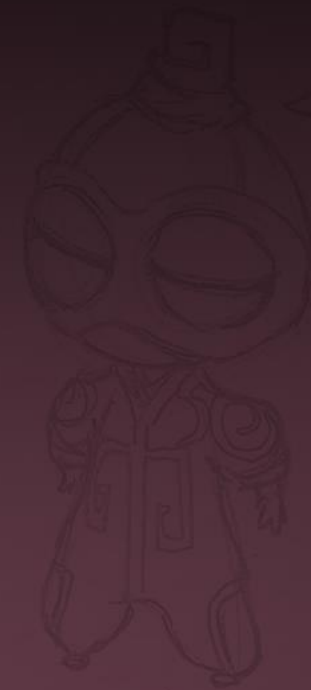


Any questions?



Game Examples (Steam Library)

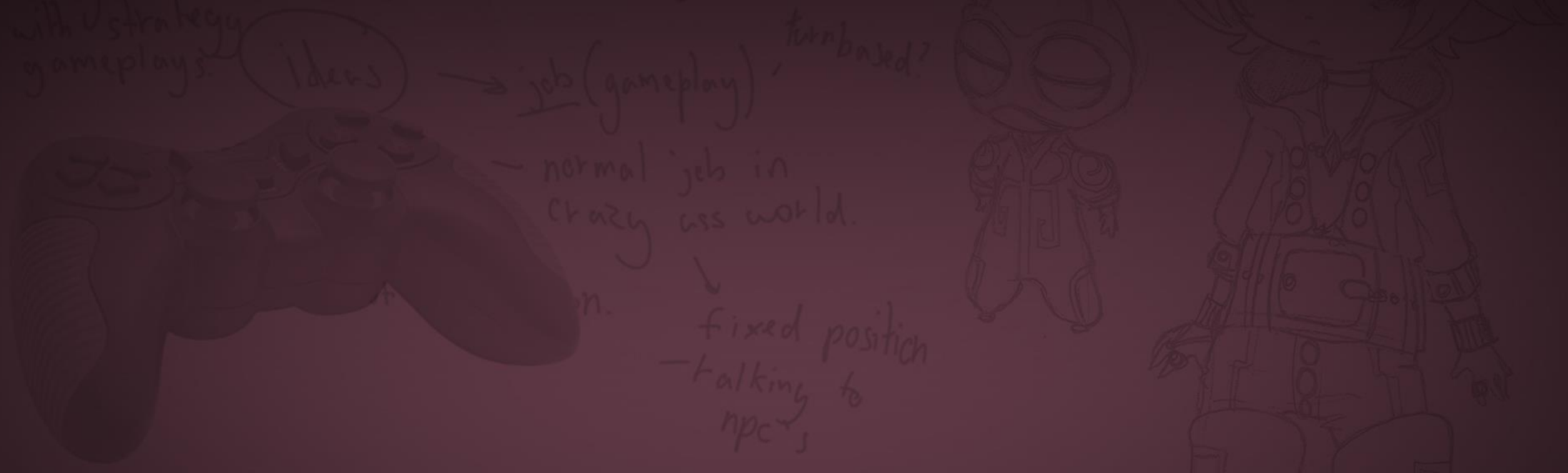
- **Orcs Must Die! (Robot Entertainment, 2012)**
Example of Simultaneous Challenges
- **Streets of Rage (Sega, 1991)**
Example of Simultaneous Challenges





Books

**Adams, E. & Rollings, A. (2007). *Fundamentals of Game Design*.
Pearson Education Inc, USA.**





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