


## Game Design Principles


1



## Principles of Game Design

- To improve the chances for success of a game, there are several principles of good game design to be followed.
  - Some of this is common sense.
  - Some of this is uncommon sense ... learn from other people's experiences and mistakes!
- Remember:
  - Players do not know what they want, but they know it when they see it!


2



## Principles of Game Design

- To start with, we will take a look at some of the fundamental principles of game design.
- Later, we will come back and take a look at how we can properly design a game to make sure these principles are being properly met.


3




## Player Empathy

- A good designer always has an idea of what is going on in a player's head.
  - Know what they expect and do not expect.
  - Anticipate their reactions to different game situations.
- Anticipating what a player wants to do next in a video game situation is important.
  - Let the player try it, and ensure the game responds intelligently. This makes for a better experience.
  - If necessary, guide the player to a better course of action.


4




## Player Empathy



Screen shot from Prince of Persia: The Sands of Time. This well designed game clearly demonstrates player empathy. The prince will miss this early jump over a pit, but will not be punished and instead can try again the correct way.



## Player Empathy



Screen shot from Batman Vengeance. The people making Batman games do not empathize with fans of this classic comic. Otherwise, Batman games would not be so disappointing on average.



## Player Empathy

- No one has complete foresight though.
  - Testers can give important feedback here.
  - Give them the freedom to experiment!
- Player empathy helps in producing a better game, and in making it faster and cheaper.
  - Better gameplay in line with expectations.
  - Some problems can be identified and eliminated during the design phase rather than during production.



7



## Remember Motivations

- It is very important to remember why the player is playing the game.
  - Social interaction
  - Physical seclusion
  - Competition
  - Knowledge
  - Mastery
  - Escapism
  - Addiction
  - And so on
- If the game does not reflect more than one of these motivations, it is hard to succeed.



## Remember Motivations

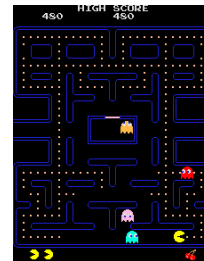
- For example, from Nolan Bushnell:
  - “All the best games are easy to learn and difficult to master. They should reward the first quarter and the hundredth.”
- Easy to learn ...
  - Encourages inexperienced players to play.
  - Otherwise, players are frustrated and psychologically discouraged from playing the game.
- Difficult to master ...
  - If it is easy to master, there is no challenge, and hence no reward or accomplishment in playing.



9



## Remember Motivations



Screen shot from Pac Man. It does a good jobs of letting novices do reasonably well, while still challenging experts.



10



## Remember Motivations



Screen shot from Katamari Damacy. This game is also easy to learn and difficult to master. And fun. And innovative. And addictive. And ...



11



## Feedback

- Remember that games are interactive.
  - When the player does something, the game should give back a discernable response.
  - No input should go unanswered.
- This response can take many forms.
  - Visual, aural, or even tactile feedback.
  - Can be either positive or negative.



12

## Feedback

- Providing feedback is relatively easy when the player is progressing normally through the game.
- Much harder when doing something “wrong”.
  - It is quite frustrating for the player to do something and have nothing happen.
  - Steer them in the right direction, give a message, or an error sound effect.
- Be careful not to destroy the illusions the game is trying to create however!
  - E.g. when the player tries to walk through a wall.

13

## Feedback

- Positive feedback
  - An achievement that makes subsequent achievements easier
    - Taking an opponent’s piece in chess
    - If you got to use his piece as your own, it would be easier still
  - Without positive feedback it is too easy to get stalemate
- Must be controlled to avoid giving the lead player too much advantage

14

## Feedback – positive, stalemate

15

## All positive feedback?

- Introduce Negative Feedback
  - An achievement that makes subsequent achievements harder
    - Gold is heavy and slows you down
    - The NFL draft
    - Upkeep costs
- Increase the impact of chance
  - If chance is fair, it helps as much as hurts!
- Define victory in non-numeric ways
  - Chess is not won by taking the most pieces.
- Increase the difficulty level as feedback kicks in
  - This is what happens in role-playing games

16


## Feedback

17

## Feedback

Screen shot from Unreal Championship. With audio, visual, and tactile feedback (through the Xbox controller’s rumble features), a player gets a good sense for how the game is proceeding.

## Feedback



Picture of a modified Xbox controller, the Xshok. The highlighted points on the controller are the ground/voltage leads to provide a 20,000 volt electric shock to the user, instead of vibration feedback. A pest controller provides the shock at a configurable 0.02 or 0.2 joules per pulse, depending on player insanity.

## Grounding the Player

- Players should always know where they are in a game and why they are doing what they are doing.
  - Games can be huge, and it might be easy for players to feel lost.
  - Games are rarely played start-to-finish in a single session, so it can be easy for players to lose sight of their goals as well.
- Sometimes it is helpful to give players maps, mission books, and other tools to help keep track of these things.

## Grounding the Player

- Players should always have an immediate goal, medium-range goal, and long-term goal.
  - The long-term goal is generally the objective of the game as a whole.
  - Medium-range goals are good-sized steps towards meeting the long-term goal. Often, these goals comprise the various levels of the game.
  - The immediate goal is the problem that the player is currently facing. The completion of a series of these goals should complete a medium-range goal.
- As the player deals with the current situation, they should see how this fits into the longer path leading towards success.
- Simply put, players need direction.

## Grounding the Player



Screen shot from Warcraft III. A quest is assigned. Notice how a map is available, as well as a quest listing to keep goals clear.

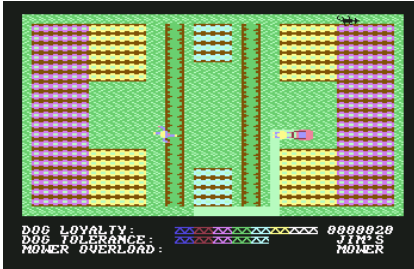
## The Moment-to-Moment Experience

- At every point while in a game, the player must have something interesting to do.
  - The worst things you can do to a player is bore them or frustrate them.
- Remember that the player always has the option to turn off the game and do something else!
  - You cannot let this happen.
  - A game should be technically easy to leave, but emotionally and psychologically difficult.

## The Moment-to-Moment Experience

- Avoiding boredom and frustration ...
  - The player should be given a continuous stream of interesting choices with significant outcomes.
  - The player should not be burdened with tedious activities.
  - Do not make players perform complex actions unnecessarily.
  - Do not make players travel back and forth across the game world for frivolous reasons.
  - Do not force the player to listen to every dialog or watch every cut scene or cinematic in its entirety.

## The Moment-to-Moment Experience



Screen shot of Hover Bovver. While representing a realistic and typically very tedious and un-fun task, mowing the lawn, it breaks from it in ways that are interesting and entertaining.

## The Moment-to-Moment Experience

- Avoiding boredom and frustration ...
  - Make restarting the game easy ... do not force the player to watch the introduction each time!
  - Dole out information in bits and pieces; do not dump it out all at once in a boring way.
  - Have the game carry out basic set-up tasks automatically, if the player so desires.
- The bottom line is that a game should give a player a lot to do, but what has to be done should be fun at the same time!

26

## The Moment-to-Moment Experience



Screen shot from Oni. Oni provides lots of action sequences streamed together. The moment-to-moment experience is handled very well. 27

## Immersion

- Immersion is what happens when the moment-to-moment experience is incredibly compelling.
  - The player is drawn completely into the game, and the real world disappears.
  - Can be just as true for chess as action games.
- A successful game sucks the player in and does not let them go.

28

## Immersion

- Immersion works by:
  - Providing a continuous stream of sounds and images that pull the player into the game.
  - Avoiding any mistakes that would jar the player out of the game.
- Such mistakes include:
  - Typos in text or bad voice acting.
  - Anything that seems out of place for the setting.
  - Graphical styles that change from scene to scene.
  - Unsuitable artificial intelligence for the situation.
- Try to keep the player in his or her dream ... if you break the dream, you lose the immersion. 29

## Immersion



Screen shot from Unreal Tournament 2004. It can be a very immersive game. Expect to lose track of time with this one. 30

## Realism

- Each game requires a careful balance between realism and fantasy.
  - Enough realism should be provided to support the immersion of the player.
  - Realism should be avoided when it makes the game more tedious or otherwise takes the fun out of it.
- Suitable laws of physics and nature should apply, depending on the setting of the game.


31

## Realism



Screen shot from Burnout Revenge. The crash sequences and collision physics are very realistic, even if the whole crash-your-car-on-purpose scenario isn't.

## Realism



Screen shot from Psi-Ops: The Mindgate Conspiracy. Using the Havok engine, this game has some interesting and realistic physics effects, even though the game is based on a science fiction premise ... at least I hope it is!

## Consistency in the World

- There should be predictable and consistent outcomes to the actions of the player.
  - It is incredibly frustrating for the results of an action to change each time the action is attempted by the player.
  - If the results of a player's actions are unpredictable, the game will be confusing and players will be discouraged from playing.
- A player should be able to easily understand what can be done and what cannot be done in the bounds of the game.


34

## Consistency in the World

- If the player comes to understand the game's bounds, reasonable actions should be successful.
  - If a reasonable solution to a game's challenge fails for no apparently good reason, the player again becomes frustrated and will feel cheated by the game.
  - In such a case, the game is not consistent with the expectations it has established in the player.
- Again, it often takes considerable play testing to uncover and address these problems.

35

## Consistency in the World



Screen shot from Grand Theft Auto III. Depending on your mission, the game was sometimes inconsistent in teleporting characters or removing vehicles if things were not the way they were supposed to be. Could be very annoying!





## Consistency in the World



Screen shot from Everquest of the first ever killing of Kerafyrm, also known as The Sleeper, a beast supposed to be unkillable. (Actually it just had over 100 billion hit points.) A small army of 200 players took nearly 4 hours to defeat it. Their first attempt was unfairly thwarted by Sony, who wanted the creature alive for the storyline. Sony relented, and let them finish the job, but not before they shattered the players' faith in the consistency of the world.



## Freedom to Play



- The best games give players the freedom to explore and experiment with the game world in unanticipated ways.
  - Even though player actions are unexpected, the game world should respond in a way that is interesting and realistic, given the situation.
- The bottom line is that players should be able to have fun that makes sense, whether they are following the game, or making things up as they go along.



38



## Freedom to Play



Screen shot from The Fellowship of the Ring. Among other problems, this game based on the movie features stunning environments, which the game will not let players explore. Quite disappointing.



## Freedom to Play



Screen shot from Hunter: The Reckoning. The game had nice, expansive levels that looked ripe for exploring. Too bad there were invisible walls everywhere to prevent you from doing so.



## Freedom to Play



Screens shot from Grand Theft Auto 3. In addition to the usual missions, there is a lot to do in the game ... paramedic mode (shown left), firefighter mode, vigilante mode, taxi driver mode, plus insane stunt bonuses, and more.

The screen shot on the right is taken from the short film "My Trip to Liberty City" by Jim Munroe. This film, shot entirely within the game, is an example of machinima (movies done using 3D real-time software, typically game engines) shown at the July 2003 New York Video Festival.



## Freedom to Play



Screen shots from Halo and Halo 2. Halo lets you do a wide variety of things in the game world. Videos of game footage taken by players with way too much time on their hands demonstrate the flexibility of this game.



## Freedom to Play




Movie clips from Chaos Theory Co-op Theatre. (Courtesy of X-Play.)<sup>43</sup>  
Another good example of fun to be had in a game with a lot of freedom.

## Writing


- Good writing is invisible.
- Bad writing draws attention to itself.
  - This immediately destroys immersion.
- Every game uses words somewhere.
  - Written in text, or spoken in dialog.
  - Might just be in cut scenes or an integral part of the game.
  - If you are not a good writer, or do not have much practice, bring in someone else! <sup>44</sup>

## Writing



Series of screen shots from Zero Wing. It does not get much worse than this! (Thankfully!) <sup>45</sup>

## Writing



Screen shot from Battle Rangers. Okay, maybe it can be worse than Zero Wing after all ... <sup>46</sup>

## Just In Time Information

- Humans are terrible at learning when given lots and lots of information ahead of time and out of any context where it can be applied.
- A good game gives out information in a “just in time” fashion when and where it can be used and “on demand” as the player realizes that they need it.

<sup>47</sup>

## Just In Time Information



Screen shot of the Legend of Zelda: Ocarina of Time. The story unfolds gradually and the player is given information in a “just in time” fashion; for example, the songs playable on the Ocarina. <sup>48</sup>





## The Illusion of Winnability

- A game should appear to be winnable and fair to all players.
  - Both beginner and expert players.
- A game should not intimidate players!
- Ideally, actually winning should be kept just out of reach for as long as possible.
  - Want to maintain challenge, but should not introduce excessive frustration either.
- Play testing is quite valuable in tuning a game to maintain this illusion.



49



## The Illusion of Winnability



Screen shot from Pac Man. The game seems winnable to both the experts and the novices.



50



## The Illusion of Winnability



Screen shot from Katamari Damacy. The player always seems to be in #1 position of winning ... just make that ball of junk a little bigger!



51



## The Illusion of Winnability

- Good games stay inside, but at the outer edge, of the player's growing competence and ability to play a game
- Ideally, a game should always appear to be challenging, but doable, regardless of the stage of the game the player is in.
- This will create a pleasurable kind of frustration.
  - A little frustration can be a good thing!



52



## Avoid Player Fatigue

- Boring or excessively frustrating the player will cause fatigue in the player and discourage them from continuing to play.
- Things to keep in mind:
  - Make challenges vary in more than degree.
  - Do not make your objective your primary threat, again for more variety.
  - Support multiple solutions to problems.



53



## Avoid Player Fatigue



Screen shot from God of War. A huge variety in challenges and<sup>54</sup> enemies really keeps the player interested in this game!





## Design Within Limits

- Do not forget that building a game is a software development project.
  - It has a cost and a schedule.
- Ultimate success of the project not only depends on good gameplay.
  - Must deliver this gameplay on time and on budget.
  - Must have technical features that work.
- This must be taken into account when designing the game to ensure that it is within reasonable limits.

55



## Design Within Limits



Concept art from Duke Nukem Forever. This project has been delayed and rescheduled so many times it isn't funny any more. (Okay, it's still funny, but not if you're a Duke fan!) Official release date: "When it's done".



## Remove Impediments

- To improve the moment-to-moment experience, technical impediments to the player's enjoyment of the game must be removed.
  - Such impediments can break the sense of immersion the player gets from a game.
- While such impediments typically show up during implementation, proper design can eliminate them or reduce their effects in the beginning.

57



## Remove Impediments

- Controls.
  - If one of the bigger challenges to a game is its control scheme, that game is in big trouble.
  - A bad control scheme that cannot be changed is one of the most frustrating things to a game player.
  - A good control scheme is so transparent that you are not even aware it is there. It just allows you to easily play the game without frustrations.
  - Since players often have different tastes in control schemes, try to provide the most popular approaches (follow genre conventions!) and allow easy reconfigurations.



## Remove Impediments



Screen shot from Unreal Championship. It is interesting that this Xbox title has been criticized for a poor control scheme requiring many reconfigurations, while its PC cousin released at the same time, Unreal Tournament 2003<sup>99</sup> has been hailed for its controls and gameplay at the same time.



## Remove Impediments



Screen shot from Superman: The Man of Steel. The multiple control schemes used in this game (free flight and fighting) are quite difficult to use. As much as you might like Superman, the controls make this game hard to enjoy.





## Remove Impediments



Screen shot from SOCOM: US Navy Seals. Like many tactical shooter games, this game allows voice input to control squad mates. Sometimes this works well in a game, but sometimes it doesn't. It's a good idea though!



## Remove Impediments



Screen shot from Life Line. This game relies solely on voice input for control. While promising technology, in this game the controls come off as tedious and unreliable, killing the pace of the game. A big impediment in this case.



## Remove Impediments



Picture of Eye Toy camera, left, and screen shot of game, right. This innovative peripheral for the Playstation 2 allows games to put the player in the game. By tracking motion and position through the camera, the game can be effectively controlled. The technology appears to be solid, and there are lots of interesting titles out now, and on the way, to use it.



## Remove Impediments



Images from Kick Ass Kung-fu. It allows for a motion captured individual (shown lower left, with targeting scan upper left) to be transposed into a game (shown at right). Weapons and charged energy attacks are supported too!



## Remove Impediments

- Excessive disk swapping.
  - If you have a multiple-disk game with a large world that the user has complete access to at any time, swapping could be a problem.
  - When the player moves between areas with content on different disks, swapping will occur every time the boundary is crossed.
  - Storing all content onto the hard drive might be too resource intensive.
  - With proper level design, one can sacrifice total freedom to go anywhere at any time to reduce the amount of swapping needed.
- Not currently a big problem with DVD content, but that ultimately has its limit too.



65



## Remove Impediments

- Excessive load times.
  - Moving from ROM cartridges to disks increased storage and decreased costs, but at the loss of instant access to game data.
  - If you suspect load times might be a problem for your game, improved level design can alleviate the problem.
  - Using smaller levels, reducing data requirements, incremental loading, and loading in the background are all techniques that can alleviate the problem.



66

## Remove Impediments



Screen shot from The Simpsons Road Rage. The excessive load times on this title would make most gamers want to bail out at some point in time.

## Remove Impediments

- Game interruptions.
  - In every game there are breaks in the action, between levels, when the player loses a life or otherwise hits a failure condition, and so on.
  - These breaks should be minimized in length and designed carefully to keep the player in the game.
  - At the end of a level, the player should be teased with the challenge of the next one.
  - When the player loses a life or otherwise hits a failure condition, they should be allowed to get back into action as soon as possible without losing much of the progress they have gained.

## Remove Impediments

- Saving the game.
  - Some games still do not allow saves or severely limit their use (to between levels, and so on).
  - This, however, condemns people to replay sections of the game already completed, which is a disincentive to continue the game once interrupted.
  - More flexibility over saving gives the user more control over their experience.
    - This includes when and where saves are made and how they are named.

## Remove Impediments




Screen shot from Grand Theft Auto. Game saving was not allowed in this game, to maintain the frantic pace of action. Since such a large score was needed to clear a level, players would need to play for a long time to ensure their progress wasn't lost. A big shortcoming of an otherwise good game.

## Remove Impediments



Screen shot from Grand Theft Auto III. Unlike the first version, this allows saving between missions at your hide out. It is done in such a way that it does not disrupt the pace of the game, but still allows players to save their progress in a way that makes sense to the game.

## Remove Impediments



Screen shot from Aliens vs. Predator. When initially released, the game did not allow game saving. This was done to maintain the tense atmosphere of the game. After many complaints, a patch eventually added that feature.

## Remove Impediments



Screen shot from Evil Dead: A Fistful of Boomstick. This game has an interesting approach to saving ... as you play, you collect "save tokens". Each token can be used to save the game once. Use them carefully!


## Remove Impediments

- Housekeeping.
  - There are a few activities players should be able to do virtually at any point in the game.
  - This includes pausing, quitting, saving and loading, tuning options, and accessing help.
  - If these are handled gracefully, no one will notice, but they will be grateful.
  - If handled poorly, everyone will notice and complain.

## Remove Impediments


- Bugs.
  - Nothing knocks a player out of a game like a bug.
  - Designers can help keep bugs out of their games in several ways.
  - Be clear in design documents so things are not done wrong the first time round.
  - Be flexible in your design ... if something might be buggy to code, try something else.
  - Stay involved to ensure the game is as it was intended ... those deviations are bugs too!
  - Remember, the earlier bugs are caught, the easier they are to fix.

## Remove Impediments



Screen shot from Tomb Raider: Angel of Darkness. On the PC, this game was referred to by one source as "a bug-ridden mess". Next time, don't rush to release a game to coincide with a movie launch!

## Remove Impediments



Screen shot from Showdown: Legends of Wrestling. On the consoles, this game was full of many glaring and obvious bugs. The disappointed fans rallied for boycotts and even a class action lawsuit over this one! The 7 Acclaim went out of business. Gee ... I wonder why?

## Interface Design

- Creating an attractive yet functional interface is vital to a game's design.
  - What it looks like and sounds like.
  - How information is presented to the user.
  - How the player inputs commands.
- Vital information must be easy to get at.
  - The player should be able to understand what is going on at a glance.
  - Through a HUD, status bar, and so on.



## Interface Design

- Player viewpoint is also important.
  - If it is hard to see the action, it is too hard to play.
  - Allowing the player to control or adjust their viewpoint can make things easier.
- You cannot rely on instincts to do this right.
  - You must try it out yourself, and let play testers try it as well before committing to it.
- Pay attention to genre conventions.
  - If there is an established way to play the kind of game you are making, do not change it!

79

## Interface Design

- Elegance and ease of use are more important than increased functionality.
  - If including a non-vital feature sacrifices some aspect of the interface, it is not worth it.
- Prototype the interface early and keep adjusting it as problems are found.
- The game ultimately must be easy to play.
  - The player should not have to fight the interface.
  - The point is to let the player do things quickly and simply ... if it looks good, that's a bonus.
  - If looking good is confusing or makes it harder to play the game, it is not worth it either.

## Interface Design



Screen shot from Unreal Tournament 2003. The interface is simple, clean, and easy to use. Everything needed can be found with a glance.<sup>81</sup>

## The Start-up Screen

- The player starting a game may be ...
  - A complete novice with little experience.
  - A first time player with lots of experience, eager to get into the action.
  - An expert on the game wanting to finish it.
- The initial game start-up screen must be able to accommodate all types of players.
- Must include options to:
  - Start a new game right away, load a saved game, going to a tutorial or practice area, change game options, replay any opening sequence (which should be easy to bypass), and exit the game.<sup>82</sup>

## The Start-up Screen



Screen shot from Unreal Tournament 2003. The start-up screen includes all of the necessary components needed for the game.<sup>83</sup>

## Customizable Options

- The player should have as much control over the interface as possible.
  - Try to make everything adjustable.
  - This includes game controls, display settings, volume and sound, and so on.
  - Provide the best defaults (determined by testing), but let them be easily changed.
  - Remember that different people have different tastes, preferences, and priorities.
- When customizing the game, explain what each option does, and the impact of any changes.<sup>84</sup>



## Customizable Options




Screen shot from Unreal Tournament 2003. There are a lot of options that can be tuned to meet user preferences.

## Cheat Codes

- Include as many cheat codes as you can, while acknowledging that they break the play-balancing rules.
  - Some times, games can be quite enjoyable, even when the rules are being broken.
  - Let the player decide what is fun for themselves.
- Cheats need to be tested too. If they violate some aspect of game integrity, this must be taken into account.

## Cheat Codes




Screen shot of Doom. Doom had cheat codes to give invulnerability, weapons and ammunition, power-ups, warps to new levels, and even the ability to walk through walls. Anyone remember IDKFA, IDDQD, IDBEHOLD, and the ever popular IDSPISPOPD?

## Tutorial or Practice Mode

- Some players like to jump right into a game ... others need a chance to get their feet wet in a non-threatening atmosphere.
  - A tutorial provides a player with hands-on experience in an easy and forgiving environment.
  - It gives them the skills and techniques needed to successfully play the game.
- You cannot assume that the player will actually play the tutorial, however.
  - If they play poorly without it, have other game characters indicate that they need more practice!<sup>89</sup>

## Tutorial or Practice Mode



Screen shot from Dead or Alive Ultimate. A practice mode lets players hone their skills before going into fights with real opponents.

## Structure and Progression

- As mentioned earlier, games should be easy to learn and difficult to master.
  - Challenges early in a game should be easy to overcome.
  - As the game progresses, the challenges should become more difficult as the player gains the experience and abilities necessary to defeat them.
  - If intermediate levels are too easy, the player will lose interest, just as if the beginning levels are too difficult.



## Structure and Progression

- Slowly introduce players to the intricacies and details of the game.
  - If the player needs a skill to defeat something later in the game, give them the chance to practice and hone this skill
  - If the game requires an intuitive leap, give them examples of it earlier in the game.
- Listen to testers on these issues.
  - A challenge you find ridiculously easy might seem impossible to others.
  - You need both seasoned and novice testers. 91



## Structure and Progression



Screen shot from Oni. Oni is well structured to allow for an easy entrance to the game as well as challenges later on (like this one!). 92



## Balance

- Properly balancing a game is one of the most difficult yet vital parts of game design.
  - An unbalanced game is less satisfying than one that is balanced.
- No game should ever be decided by factors outside of the player's control.
  - If it happens, the game is not properly balanced.
- There are many kinds of balance ... 93



## Balance

- Player-player balance:
  - A game should be fair so that no player gets a special advantage other than their own skill, experience, and judgement.
  - There can be luck in the game, but it should apply evenly to all players.



94



## Balance

- Player-gameplay balance
  - Deals with the player's relationship with the game itself.
  - A game should be played *with*, not *against*.
  - The player should not find that the toughest opponent is the game itself.
  - The player's learning curve should be matched both with the challenges faced and rewards received as a result.



95



## Balance

- Gameplay-gameplay balance
  - Features within the game should be balanced against one another.
  - Each kind of weapon, vehicle, character, and every other type of game element should have strengths and weaknesses so that one is not always superior to the others.
  - There should be a variety of interesting choices, not a single choice that always dominates.



96

## Balance


- The simplest way to provide balance is exact symmetry ... every weapon, vehicle, character, and other game element has exactly the same characteristics.
- Such symmetry is the fairest solution, but often asymmetry is more interesting, realistic, and aesthetically pleasing.
- The best way to provide balance is rigorous play testing.
  - Allow asymmetries in the game.
  - Let testers identify where unfairness lies and adjust game characteristics accordingly.

## Balance



Screen shot from Warcraft III. Balance is critical in a game like this to ensure fairness to all players. 98

## Balance



Screen shot from World of Warcraft. This is a picture from the "Million Gnome March", a protest organized in early 2005 over imbalances against Gnomes in the game. Why are they mostly naked though? Shudder.

## Fairness

- Players should not face obstacles that can only be overcome through trial and error.
  - A player may be able to overcome obstacles in this way, but it should not be the only way.
  - There should always be some way that each obstacle can be overcome on the first attempt.
  - Requiring a player to fail repeatedly to complete a game is inherently unfair.
- In theory, a player should be able to complete a game on the first attempt, without dying.
  - It should be highly unlikely, but it should still be possible.

100

## Taking Care of the Player

- Remember that you are not the player's adversary.
  - Your job is to help the player enjoy the game you have created.
- This is difficult since this often involves challenging the player.
  - There is a delicate balance between pleasure and frustration.
- There are many ways to design a game to help the player get through it.

101

## Taking Care of the Player

- Dead man walking.
  - Do not put the player into a position where winning is impossible and the player does not know it.
  - Tends to happen in adventure games, but can happen in other genres as well.
  - The player should be able to trust that, at any given moment, if they do the right thing, the game can still be won.

102

## Taking Care of the Player



Screen shot from Dragon's Lair 3D. Frequently, this game does not properly take care of the player. It is quite possible to get stuck with no way forward, and no way back either. Insanely frustrating at times!

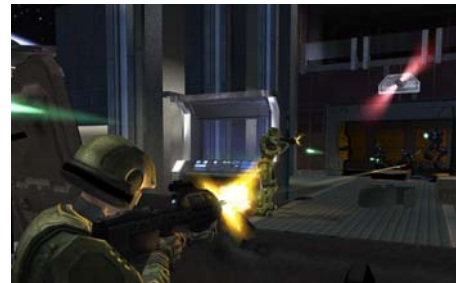
## Taking Care of the Player

- Dead man still walking.
  - For that matter, a player should never be put in a situation where winning is impossible, even if the player knows it.
  - Winning might be incredibly improbable, but it should always be possible.
    - Players should be able to get out of situations where defeat seems inevitable.
    - Players should never get stuck in a situation alive where they cannot continue to win the game.<sup>104</sup>

## Taking Care of the Player

- Protect newbies.
  - When a game begins, take it easy on the beginner player.
  - New players need a chance to learn how to play the game safely.
  - Nothing is worse than not being able to overcome the first challenge in a game, whether it be the simplest opponent, puzzle, and so on.
  - This can be humiliating, and discourages the player from continuing to play.<sup>105</sup>

## Taking Care of the Player



Screen shot from Halo 2. In early parts of this game, you had lots of squad mates to help watch your back. Good for protecting newbies until they could look after themselves.

## Taking Care of the Player

- Over and over and over ...
  - Players should not be punished by having to repeat a complex and difficult sequence of actions every time one small part is done wrong.
  - Some games have levels in this fashion, where no matter how close the player is to completion, one false step sends the player back to start over.
  - This is absolutely, positively, not fun!
  - This can be solved through the use of saved games, or checkpoints that can avoid redoing the whole sequence of actions.
  - Of course, the best solution is to avoid designing such a sequence into a game in the first place.<sup>107</sup>

## Taking Care of the Player



Screen shot from Halo 2. Halo 2 uses checkpointing to prevent excessive level repetition when the player dies. If a game has long levels or missions to complete, checkpointing is a must.



## Taking Care of the Player

- Give the player the information they need.
  - All knowledge a player needs in order to play a game should be included within the game.
  - All the information should be in the game, rather than a manual, strategy guide or some kind of companion website.
  - Some games have undocumented features that can be fun, but do not make them essential to the game, because not everyone will find them.
  - Since you cannot be sure what your players know entering your game, any special knowledge needed to complete the game must be made available to the player inside the game.



109



## Taking Care of the Player

- Reduce player paranoia.
  - Players often spend much of a game worrying if they are doing the right thing or following the right path.
  - They need some form of reassurance when they are doing the right thing ... some sort of incremental rewards as they progress towards their goals.
  - If they are straying, gently let them know and steer them in the right direction.



110



## Taking Care of the Player

- Offer levels of difficulty.
  - By providing several levels of difficulty, the player can tune the game to their own level of ability and experience.
  - Having novice, intermediate, and expert levels are a good start.
  - Levels of difficulty can be provided in all types of game, though some require more careful thought than others.



111



## Taking Care of the Player



Screen shot from Wolfenstein 3D. It had multiple levels of difficulty, with some very creative names!

112



## Good game play

- Iterative design and development
  - Get gameplay right at the beginning
  - Make game playable as soon as possible
    - Graphics, sound can be lousy at the beginning
  - Also means you have something to turn in
- Playtest
  - Make the game fun for players, not for the designer, programmer, artist, ...
- Playtest
- Playtest
- A game that "comes together" the night before, won't be fun



113