Ability Losses

The loss of ability to perform an action in the game.

Example: Game masters in roleplaying games can sometimes be forced to invent events that are unavoidable to the players to strip them of equipment that gives the abilities that disrupt the game balance.

Instantiates: Gain Competence, Continuous Goals, Character Development, Penalties, Downtime, Player Elimination, Limited Set of Actions, Varied Gameplay, Gain Ownership

Modulates: Damage, Player Balance, New Abilities, Narrative Structures, Right Level of Difficulty, Right Level of Complexity, Spawning, Player Killing

Instantiated by: Movement Limitations, Ultra-Powerful Events, Role Reversal

Modulated by: Time Limits, Units, Balancing Effects, Indirect Control, Game Masters, Negotiation, New Abilities

Potentially conflicting with: Competence Areas, Illusion of Influence, Save-Load Cycles, Freedom of Choice, Consistent Reality Logic, Perceived Chance to Succeed, Narrative Structures

Achilles' Heels

A special weakness of an enemy that can be used to defeat that enemy much easier than by other means.

Example: many monsters in roleplaying games can only be damaged by certain weapons, for example silver or magic weapons. This kind of vulnerability can be seen as a kind of *Achilles Heel* even though it is not defined by a specific area but by a specific type of attack.

Instantiates: Strategic Knowledge, Gain Information, Supporting Goals, Varied Gameplay, Right Level of Difficulty, Experimenting, Puzzle Solving

Modulates: Damage, Combat, Overcome, Boss Monsters

Instantiated by:

Modulated by: Public Information, Narrative Structures, Tools, Clues, Traces

Potentially conflicting with:

Agents

Entities in games that take the roles of players but are controlled by the game system.

Example: Bots in first-person shooters or real-time strategy games let players simulate multiplayer variants of the game.

Instantiates: Enemies, Tied Results

Modulates: Conflict, Competition, Multiplayer Games, Handicaps, Social Interaction

Instantiated by: Dedicated Game Facilitators

Modulated by:

Potentially conflicting with:

Aim & Shoot

The act of taking aim at something and then shooting at it.

Example: *Pokemon Snap!* gives players a camera and lets them move along a track trying to take as good pictures as possible of Pokemons.

Instantiates: Spatial Immersion, Tension, Movement, Dexterity-Based Actions, Extended Actions, Timing, Evade, Maneuvering

Modulates: Tools, Resources, Capture, Delivery

Instantiated by: Combat, Real-Time Games, Eliminate, Privileged Movement, Enemies, Alignment

Modulated by: First-Person Views, Third-Person Views, Traverse, Movement, The Show Must Go On, Moveable Tiles, Evade

Potentially conflicting with: God Views, Obstacles, Disruption of Focused Attention, Surprises

Alarms

Alarms are abstract game elements that provide information about particular game state changes.

Example: Some team-based first-person shooters, such as *Return to Castle Wolfenstein: Enemy Territory*, include *Alarms* to inform the players about events that are relevant on a team level, e. g., that a particular goal has been completed or that a certain activity has been initiated by the other team.

Instantiates: Disruption of Focused Attention

Modulates: Rescue, Reconnaissance, Stealth, Enemies, Game State Overview

Instantiated by:

Modulated by: Outstanding Features, Bluffing

Potentially conflicting with:

Alignment

This goal consists of forming a linear alignment of game elements.

Example: *Bejeweled* lets players swap game elements which are neighbors, removing them and rewarding the player with points if three or more game elements become aligned.

Instantiates: Configuration, Aim & Shoot, Hovering Closures, Progress Indicators

Modulates: Capture, King of the Hill

Instantiated by:

Modulated by: Connection

Potentially conflicting with:

Alliances

A group of players who have agreed to obey particular and specific rules of conduct towards each other and who, usually, also have a shared agenda.

Example: The board game *Diplomacy* does not have explicit *Alliances*, but the players agree upon the rules of conduct outside the game system. These agreements range from the simple "let's not attack each other during this turn" to more complex "we will coordinate the use of our armies and fleets in a way so that we can invade Italy within two years, and we will split the spoils of war equally." The latter agreement is also a good example of a formulation of the rules of conduct that is open to interpretation.

Instantiates:

Modulates: Competition

Instantiated by: Cooperation, Social Interaction, Enemies, Social Organizations, Mutual Goals

Modulated by: Social Statuses, Shared Resources, Individual Penalties, Player Decided Results, Competition, Interferable Goals, Uncommitted Alliances, Secret Alliances, Dynamic Alliances, Shared Penalties, Shared Rewards, Social Dilemmas, Betrayal

Potentially conflicting with:

Alternative Reality

The game is described as taking place in an alternative reality in order to justify and motivate game elements, possible actions, and rules that contradict the ordinary laws of nature or the usual rules of social conduct.

Example: *Medieval: Total War* is a strategy game set in the power struggles of medieval Europe and as such can be classified as an alternative history game. The game contains huge amounts of references to historical facts, such as political events and real people. The tactical part of the game allows the player to control seemingly realistic troops in a fluid three-dimensional environment.

Instantiates: Predictable Consequences, Emotional Immersion, Consistent Reality Logic

Modulates: Indirect Information, New Abilities

Instantiated by: Roleplaying

Modulated by: Ephemeral Goals, Focus Loci, Identification, Rewards, Characters, Narrative Structures, Clues, Extra-Game Information, Storytelling, Cut Scenes, Construction

Potentially conflicting with:

Analysis Paralysis

The players can spend considerable amounts of time planning their actions, because the consequences of the actions are at least somewhat predictable, and the number of possible outcomes grows exponentially the further in game time the players plan ahead.

Example: *Diplomacy*, even though the possible actions are quite limited, can cause *Analysis Paralysis* when the players start to think recursively about what the other players are trying to do and how the other players would perceive the players' actions.

Instantiates: Downtime

Modulates:

Instantiated by: Cognitive Immersion, Stimulated Planning, Limited Set of Actions, Irreversible Actions, Budgeted Action Points, Tradeoffs, Freedom of Choice, Turn Taking, Predefined Goals, Right Level of Complexity, Game State Overview

Modulated by: Predictable Consequences, Discard Piles, Time Limits, Perfect Information, Symmetric Information

Potentially conflicting with: Limited Foresight, Anticipation, Limited Resources, Randomness, Limited Planning Ability

Anticipation

The feeling of being able to predict future game events in the games to which one has emotional attachments.

Example: *Anticipation* is common in roleplaying games when players have planned the development of their characters and they near points where the characters will advance.

Instantiates: Emotional Immersion

Modulates: Tension

Instantiated by: Predictable Consequences, Spatial Immersion, Cognitive Immersion, Emotional Immersion, Downtime, Rewards, Turn Taking, Betting, Delayed Effects, Player Defined Goals, Planned Character Development, Delayed Reciprocity, Hovering Closures, Ultra-Powerful Events, Narrative Structures

Modulated by: Time Limits, Near Miss Indicators, Betrayal, Imperfect Information, Red Herrings

Potentially conflicting with: Surprises, Analysis Paralysis

Area Control

Being in control over who can move within an area in the game world, or having access to actions linked to locations in the game world.

Example: having implicit *Area Control* over the center of the game board in *Chess* is one of the main strategies in the game.

Instantiates: Attention Swapping, Continuous Goals, Combat, Strategic Knowledge, Movement Limitations, Emotional Immersion, Overcome, Reconnaissance, Selectable Sets of Goals, Supporting Goals, Team Play, Tradeoffs, Risk/Reward, Privileged Abilities, Ownership

Modulates: Game World, Game State Overview

Instantiated by: Goal Points, Extended Actions, Bidding, Trading, Transfer of Control, Race, Traverse, Strategic Locations, Stealth, Contact, Gain Ownership

Modulated by: Penalties, Committed Goals, Producers, Resources, Interferable Goals, Focus Loci, Rewards, Controllers

Potentially conflicting with:

Arithmetic Rewards for Investments

The possible rewards have a linear relationship to the investments, that is, if the investment is double, the comparable reward is doubled.

Example: the unit construction in strategy games is often based on *Arithmetic Rewards for Investments*. If it costs 100 production points to construct a tank, it costs 200 points to construct two tanks, 300 points to construct three tanks, and so on.

Instantiates: Predictable Consequences, Freedom of Choice

Modulates: Investments, Rewards, Risk/Reward

Instantiated by:

Modulated by: Time Limits, Diminishing Returns

Potentially conflicting with: Geometric Rewards for Investments, Diminishing Returns

Asymmetric Abilities

Players, or game elements, do not all have the same actions available.

Example: The board game *Space Hulk* has one player controlling a few space marines with guns under time pressure that do not get reinforcement in conflict with a player controlling many genestealers that can only fight in close combat but continuously get reinforcements and whose numbers are not exactly known the other player.

Instantiates: Gain Competence, Collaborative Actions, Constructive Play, Negotiation, Team Play, Freedom of Choice, Orthogonal Unit Differentiation, Varied Gameplay, Replayability, Paper-Rock-Scissors, Social Organizations

Modulates: Fog of War, Game Mastery, Communication Channels, Asymmetric Goals, Team Development

Instantiated by: Privileged Abilities

Modulated by: Turn-Based Games, Balancing Effects, Tournaments, Asymmetric Information, Paper-Rock-Scissors

Potentially conflicting with: Symmetry, Player Balance

Asymmetric Goals

Players have structurally different goals requiring different tactics and actions.

Example: The board game *Space Hulk* provides players with many low-level *Asymmetric Goals* by matching slow-moving space marines, which have ranged weapons, against fast-moving aliens, which can only fight in close combat.

Instantiates: Replayability, Varied Gameplay

Modulates: Competition, Freedom of Choice

Instantiated by: Role Reversal, Preventing Goals

Modulated by: Asymmetric Abilities, Paper-Rock-Scissors

Potentially conflicting with: Player Balance, Symmetric Goals

Asymmetric Information

Players have different information available to them, i.e., some players know more than other players

Example: In *Illuminati*, it is possible that one player has hidden goals that the other players do not know. This forces the other players to try to guess the hidden goals from the player's actions.

Instantiates: Gain Information, Conceal, Betrayal, Secret Alliances, Secret Resources, Bluffing

Modulates: Bidding, Asymmetric Abilities, Unknown Goals, Negotiation, Predefined Goals

Instantiated by: Card Hands

Modulated by: Perfect Information

Potentially conflicting with: Perfect Information

Asymmetric Resource Distribution

The resources are distributed asymmetrically among the players, that is, the players have different access and ownership rights to different kinds of resources during the game.

Example: *Pokémon* has at least two layers of *Asymmetric Resource Distribution*: within the single player game there are "rare" *Pokémons* that are difficult to find, and the game itself has several variants where the initial *Pokémon* selections are different. As with *Magic: The Gathering* these factors create stronger incentives for playing the game itself for a longer time and also to get in contact with other players who might have different experiences and different *Pokémons* available.

Instantiates: Handicaps, Varied Gameplay

Modulates: Trading, Multiplayer Games, Resources, Mutual Goals, Ownership, Social Interaction, Renewable Resources, Perceived Chance to Succeed, Single-Player Games

Instantiated by: Player-Decided Distribution of Rewards & Penalties

Modulated by: Randomness

Potentially conflicting with: Symmetry, Player Balance, Symmetric Resource Distribution

Asynchronous Games

Games where the players game and play sessions do not necessarily overlap in time.

Example: The players do not often play the game at the same time in play-by-mail games, even though in many cases their game sessions are the same. Some massively multiplayer play-by-mail games, such as *Quest* from KJC Games, share the characteristics of MMORPGs in that the players' game sessions do not have to overlap.

Instantiates: Downtime

Modulates: Freedom of Choice, Persistent Game Worlds

Instantiated by: Dedicated Game Facilitators, Ghosts

Modulated by: Tick-Based Games, Turn-Based Games, Real-Time Games, Communication Channels

Potentially conflicting with: Public Information

Attention Swapping

Players have to move their attention between different parts of the game.

Example: In *Go* the opening game is based around play in the four corners of the board which each can be considered semi-independent areas. Moving game play from one corner to another is a simple way for more experienced players to challenge novice players since these have much greater difficult with the *Attention Swapping* between the parts of the board.

Instantiates: Reconnaissance, Tension, Resource Management, Cognitive Immersion

Modulates: Right Level of Complexity, Stimulated Planning, Spatial Immersion, Right Level of Difficulty, Cognitive Immersion, Tradeoffs, Limited Foresight, Real-Time Games

Instantiated by: Disruption of Focused Attention, Units, Cameras, Parallel Lives, Surprises, Extended Actions, Interruptible Actions, Collaborative Actions, Maneuvering, Combat, Enemies, Area Control, Book-Keeping Tokens

Modulated by: The Show Must Go On, Game State Overview, God Views, Incompatible Goals, Penalties, Rewards, Conflict, Focus Loci

Potentially conflicting with: Game State Overview, Emotional Immersion

Avatars

Avatar is a game element, which is tightly connected to the player's success and failure in the game. In many cases, the Avatar is the only means through which a player can affect the game world.

Example: The players are represented as personalized *Avatars* in Massively Multiplayer Online Roleplaying Games.

Instantiates: Spatial Immersion, Immersion, Ownership, Enemies, Third-Person Views, First-Person Views

Modulates: Combat, Persistent Game Worlds, Player Killing, Roleplaying, Consistent Reality Logic, Survive

Instantiated by: Mule

Modulated by: Privileged Abilities, Tools, Character Development, Characters, Improved Abilities, Producers

Potentially conflicting with: God Views, Units, Parallel Lives, Emotional Immersion

Balancing Effects

Rules and effects in games that lessen the differences of value used to measure competition between players.

Example: multiplayer online first-person shooters often have possibilities to force teams to be balanced in numbers. Some, such as *Return to Castle Wolfenstein: Enemy Territory*, have functionality that can automatically reassign teams based on experience to try and balance the teams further.

Instantiates: Player Balance, Smooth Learning Curves, Team Balance, Tension, Higher-Level Closures as Gameplay Progresses, Right Level of Difficulty, Perceived Chance to Succeed

Modulates: Character Development, Penalties, Asymmetric Abilities, Multiplayer Games, Transfer of Control, Improved Abilities, Ability Losses, Decreased Abilities, Spawning, Rewards, Dice, Pick-Ups, Turn Taking

Instantiated by: Extended Actions, Player Decided Results, Movement Limitations, Interruptible Actions, Illusionary Rewards, Budgeted Action Points, Handicaps, Diminishing Returns, Dedicated Game Facilitators, Game Masters, Tradeoffs, Player-Decided Distribution of Rewards & Penalties, Delayed Effects, Randomness, Score, Shared Rewards, Rewards, King of the Hill

Modulated by: Game State Overview, Uncommitted Alliances

Potentially conflicting with: Perceivable Margins

Betrayal

One or several players that have an agreement with other players either intentionally fail to do as agreed or otherwise hinder the fulfillment of the agreement.

Example: The negotiation game *Intrigue* forces players into situations where they sometimes must betray another player due to having made certain promises to several different players that appeared to be unrelated when they were given but later became related.

Instantiates: Conflict, Surprises, Leaps of Faith, Emotional Immersion, Social Dilemmas, Role Reversal, Tension, Uncommitted Alliances, Risk/Reward

Modulates: Trading, Alliances, Anticipation, Tied Results, Social Interaction, Negotiation, Narrative Structures

Instantiated by: Collaborative Actions, Player Decided Results, Committed Goals, Cooperation, Player-Decided Distribution of Rewards & Penalties, Mutual Goals, Individual Rewards, Asymmetric Information, Bluffing

Modulated by: Indirect Information, Penalties, Rewards, Delayed Reciprocity, Delayed Effects

Potentially conflicting with: Cooperation

Betting

Investing resources in the likelihood of an outcome.

Example: betting in *Poker* is based on the cards held and the actions of other players. The proportions between risk and reward in *Poker* are not fixed but vary due to the willingness of all players to bet.

Instantiates: Meta Games, Conflict, Emotional Immersion, Anticipation, Closed Economies, Resource Management, Transfer of Control, Investments, Rewards, Game Mastery, Player Defined Goals, Extra-Game Consequences, Risk/Reward, Bluffing, Luck, Delayed Effects, Hovering Closures, Tension

Modulates: Bidding, Resources, Gain Ownership

Instantiated by: Gain Ownership, Ownership

Modulated by: Predictable Consequences, Strategic Knowledge, Self-Facilitated Games, Tournaments, Quick Games, Dedicated Game Facilitators, Imperfect Information, Randomness

Potentially conflicting with:

Bidding

Players invest resources, usually some kind of a currency, for an uncertain outcome in order to get a reward of some kind.

Example: Kicking out a player from an open game instance of *Return to Castle Wolfenstein: Enemy Territory* requires that a certain amount of players have voted for kicking the player out.

Instantiates: Converters, Competition, Transfer of Control, Area Control, Player Elimination, Tradeoffs, Player Defined Goals, Collaborative Actions

Modulates: Cooperation, Resources, Gain Ownership, Eliminate, Turn Taking

Instantiated by:

Modulated by: Direct Information, Turn Taking, Symmetric Information, Asymmetric Information, Negotiation, Betting, Bluffing, Rewards

Potentially conflicting with:

Bluffing

Players have a possibility to convey false information to other players in order to benefit from the situation.

Example: The classic board game *Diplomacy* has all the information about positions of the players' armies and fleets available to all players. *Bluffing* in this game is based on giving the other players false information about the current strategies, goals, and agreements between the players. The game even has a specific diplomacy phase for giving the players the ability to scheme against other players.

Instantiates: Risk/Reward, Betrayal, Tension

Modulates: Bidding, Trading, Emotional Immersion, Alarms, Social Interaction

Instantiated by: Indirect Information, Social Interaction, Negotiation, Betting, Asymmetric Information

Modulated by: Direct Information, Symmetric Information

Potentially conflicting with: Symmetric Information, Luck

Book-Keeping Tokens

Game elements that do not represent concrete objects in the game world but instead holds specific parts of the game state.

Example: *Puerto Rico* has the role of governor that is passed among players. To help players keep track of their roles a small governor card is past to the player who currently is the governor.

Instantiates: Attention Swapping, Cognitive Immersion, Stimulated Planning, Imperfect Information, Public Information, Game State Overview, Extra-Game Actions, Focus Loci

Modulates:

Instantiated by: Cards

Modulated by:

Potentially conflicting with: Resource Management, Memorizing, Immersion

Boss Monsters

A more powerful enemy the players have to overcome to reach certain goals in the game.

Example: The games in *The Legend of Zelda* series are almost totally structured around defeating *Boss Monsters* in order to progress in the game and to reach the high-level goals of the game.

Instantiates: Overcome, Tension, Higher-Level Closures as Gameplay Progresses

Modulates: Rescue, Levels

Instantiated by: Eliminate

Modulated by: Achilles' Heels

Potentially conflicting with:

Budgeted Action Points

Points that are used by players to do actions during their turns.

Example: calling air strikes, producing ammunition boxes, or handing out health packs in *Return to Castle Wolfenstein: Enemy Territory* all requires resources from the players doing the actions. These resources are limited by are regained over time, letting players choose between continuously doing the actions at regular intervals or saving up to do several of them in a short time span.

Instantiates: Cognitive Immersion, Movement Limitations, Resources, Renewable Resources, Tradeoffs, Freedom of Choice, Varied Gameplay, Analysis Paralysis, Balancing Effects, Limited Resources

Modulates: Tick-Based Games, Turn-Based Games, Real-Time Games, New Abilities, Privileged Abilities, Characters, Skills

Instantiated by: Combat, Movement, Investments

Modulated by: Status Indicators

Potentially conflicting with:

Buttons

Buttons are game elements, which players can use to activate events or actions in the game world.

Example: in the early first-person computer roleplaying game *Dungeon Master* the buttons and levers on the walls are used to open doors, walls, and sections of the floor.

Instantiates: Controllers

Modulates:

Instantiated by:

Modulated by: Reversability, Irreversible Actions

Potentially conflicting with:

Cameras

Camera is an abstract game element that decides what is the player's current view to the game world.

Example: *Super Mario 64* provides an exception to the rule that *Cameras* are abstract objects that are not explained within the game world: although not affected by events in the game world, the camera, and the cameraman, can be seen in mirrors. Another minor exception is the camera in the party game *Monkey Boxing* in *Super Monkey Ball 2*, which can be hit during the celebration scene when one of the monkeys has won the game.

Instantiates: Attention Swapping, Extra-Game Actions

Modulates: God Views, Spatial Immersion, Units, Tradeoffs

Instantiated by:

Modulated by: Fog of War

Potentially conflicting with: Consistent Reality Logic

Camping

Staying in one location in the game for extended periods of time and perform the same action repeatedly.

Example: Weapons in first-person shooters that are good for sniping together with inaccessible areas create opportunities for camping.

Instantiates:

Modulates: Stealth, Spawn Points, Guard, Spawning

Instantiated by:

Modulated by: No-Ops, Game World, Inaccessible Areas

Potentially conflicting with: Player Balance, Varied Gameplay

Capture

Capture is the goal pattern where the end result is the elimination or change of ownership of an actively resisting goal object.

Example: Priests in *Age of Empires* can convert pieces controlled by other players as their main offensive action.

Instantiates: Combat, Higher-Level Closures as Gameplay Progresses, Transfer of Control, Gain Ownership, Timing, Movement, Preventing Goals

Modulates:

Instantiated by: Overcome

Modulated by: Aim & Shoot, Connection, Enclosure, Turn-Based Games, Contact, Alignment, Configuration, Evade, Puzzle Solving, Real-Time Games, Maneuvering, Turn Taking, Ownership, Eliminate

Potentially conflicting with:

Card Hands

A Card Hand consists of the cards, which are owned by the player, but which have not yet been put into play.

Example: *Bohnanza* is a card game where the order of the cards in the *Card Hand* is important, as the players have to play the cards in a specific sequence.

Instantiates: Gain Information, Asymmetric Information, Secret Resources, Container, Ownership

Modulates: Tiles, Cards

Instantiated by: Tile-Laying

Modulated by:

Potentially conflicting with:

Cards

Cards are physical game elements used to distribute tokens, often with different characteristics, to players without necessarily revealing the distribution.

Example: the board game *Talisman* uses *Cards* to randomize the contents of areas on the game board, and the *Card Hands* players possess are public inventories of items found.

Instantiates: Randomness, Imperfect Information, Non-Renewable Resources, Book-Keeping Tokens, Focus Loci

Modulates:

Instantiated by:

Modulated by: Discard Piles, Drawing Stacks, Card Hands, Consumers, Converters

Potentially conflicting with:

Character Development

The improvement of characters' skills or knowledge.

Example: Character levels associated with skill improvements are a general way of measuring *Character Development*. These levels are typically raised by gaining experience points and give the players' characters more hit points and abilities.

Instantiates: Player Defined Goals, Paper-Rock-Scissors, Varied Gameplay, Extra-Game Consequences, Perceived Chance to Succeed, Improved Abilities

Modulates: Avatars, Consistent Reality Logic, Narrative Structures, Persistent Game Worlds, Roleplaying, Characters

Instantiated by: Gain Competence, New Abilities, Skills, Ability Losses

Modulated by: Rewards, Collecting, Planned Character Development, Diminishing Returns, Balancing Effects, Freedom of Choice, Investments, Privileged Abilities, Trans-Game Information

Potentially conflicting with: Player Balance

Characters

Abstract representations of persons in a game.

Example: *Return to Castle Wolfenstein: Enemy Territory* is a first-person shooter where players have characters that can develop between levels by gaining experience points in various skills.

Instantiates: Competence Areas, Emotional Immersion, Investments, Focus Loci, Illusion of Influence, Identification, Creative Control, Immersion, Enemies, Orthogonal Unit Differentiation, Player Defined Goals, Narrative Structures

Modulates: Avatars, Multiplayer Games, Player Balance, Alternative Reality, Varied Gameplay, Roleplaying

Instantiated by:

Modulated by: Damage, Penalties, Planned Character Development, Producers, Resources, Budgeted Action Points, Decreased Abilities, Improved Abilities, Dedicated Game Facilitators, Renewable Resources, Persistent Game Worlds, Rewards, Lives, Tools, Skills, Privileged Abilities, Storytelling, New Abilities, Character Development, Randomness, Handles, Freedom of Choice, Game Masters

Potentially conflicting with:

Chargers

Chargers are locations in the Game World that affect the players' resources when they are in the location.

Example: The board game *Robo-Rally* contains repair areas, which remove damage from the player's robot if it spends time there.

Instantiates: Gain Competence, Resource Generators, Privileged Abilities, Renewable Resources, New Abilities, Improved Abilities, Resource Locations

Modulates: Traverse, Renewable Resources, Maneuvering, Skills, Resources, Gain Ownership

Instantiated by:

Modulated by: Outstanding Features, Risk/Reward

Potentially conflicting with:

Closed Economies

A game design which makes the number of a certain type of resources fixed during entire game sessions, although the resources may take different forms or have different status during that period.

Example: the deck of cards in *Poker* forms a *Closed Economy* as no new cards are produced during the gameplay and no cards are removed from play between the rounds. The bets used in *Poker* are also a kind of *Closed Economy*; only the distribution of these resources among the players changes during the gameplay.

Instantiates: Reversability, Player Elimination, Renewable Resources

Modulates: Resources

Instantiated by: Transfer of Control, Betting, Non-Renewable Resources

Modulated by:

Potentially conflicting with:

Closure Points

Closure Points are events in gameplay where the game state is, or can be, reduced in size.

Example: Completing a level in *Quake* discards all the information about where monsters and other game elements are on the level. The only information maintained in the game state from the level are the attributes of the player's character and general stats such as difficulty level.

Instantiates: Limited Foresight, Higher-Level Closures as Gameplay Progresses

Modulates: Predictable Consequences, Narrative Structures

Instantiated by: Save Points, Tournaments, Transfer of Control, Levels, Excluding Goals

Modulated by: Downtime, Committed Goals

Potentially conflicting with: Never Ending Stories

Clues

Clues are game elements that give the players information about how the goals of the game can be reached.

Example: Many racing games contain warnings for the next turns as signs on the side of the road.

Instantiates: Indirect Information, Smooth Learning Curves, Resources, Illusionary Rewards, Outstanding Features

Modulates: Game World Navigation, Exploration, Achilles' Heels, Red Herrings, Unknown Goals, Levels, Alternative Reality, Gain Ownership, Imperfect Information, Narrative Structures, Right Level of Difficulty, Easter Eggs, Tension

Instantiated by: Helpers, Traces

Modulated by: Direct Information

Potentially conflicting with: Red Herrings, Emotional Immersion, Consistent Reality Logic

Cognitive Immersion

Having ones attention focused upon problem-solving aspects of a game.

Example: laying puzzles can be seen as a game where the *Cognitive Immersion* is completely externalized by the rearrangement of pieces players make while completing the puzzle.

Instantiates: Immersion, Anticipation, Analysis Paralysis, Downtime

Modulates: Replayability

Instantiated by: Attention Swapping, Game World Navigation, Focus Loci, Budgeted Action Points, Predictable Consequences, Resource Management, Puzzle Solving, Experimenting, Stimulated Planning, Right Level of Complexity, Book-Keeping Tokens, Game State Overview, Constructive Play, Memorizing, Consistent Reality Logic, Freedom of Choice

Modulated by: Attention Swapping, Tradeoffs, Risk/Reward, Extra-Game Actions

Potentially conflicting with: Surprises, Emotional Immersion, Disruption of Focused Attention, Limited Planning Ability

Collaborative Actions

Compound actions that require several players to simultaneously perform actions.

Example: some multiplayer first-person shooters have areas which cannot be reached by individual avatar jumping but can be reached if several avatars build `human' pyramids.

Instantiates: Attention Swapping, Perceivable Margins, Timing, Stimulated Planning, Trading, Dynamic Alliances, Combos, Player-Decided Distribution of Rewards & Penalties, Delayed Reciprocity, Cooperation, Betrayal, Player Decided Results, Constructive Play, Committed Goals, Extra-Game Actions, Game Mastery

Modulates: Team Play, Competition

Instantiated by: Goal Points, Combat, Bidding, Incompatible Goals, Asymmetric Abilities, Transfer of Control, Social Interaction

Modulated by: Extended Actions, Shared Rewards, Individual Rewards, Negotiation, Team Balance, Shared Penalties

Potentially conflicting with: Conflict, Freedom of Choice

Collecting

The action of collecting game elements from the game world.

Example: The main actions performed in *Pac-Man* is moving and collecting pills.

Instantiates: Hierarchy of Goals, Movement, Collection, Player Defined Goals, Maneuvering

Modulates: Character Development

Instantiated by: Pick-Ups, Transfer of Control, Rewards, Power-Ups, Score, Tools, Resources

Modulated by: Herd, Geometric Rewards for Investments

Potentially conflicting with:

Collection

The completion of several goals that together form a coherent unit.

Example: In *Lotto*, the *Collection* is completed by getting matching numbers during the draw.

Instantiates: Transfer of Control, Team Elimination

Modulates: Narrative Structures

Instantiated by: Last Man Standing, Configuration, Collecting, Gain Ownership

Modulated by: Save Points, Pick-Ups, Ownership, Dynamic Goal Characteristics

Potentially conflicting with:

Combat

Actions where the intent is to kill or otherwise overcome opponents

Example: Fighting games such as the *Dead or Alive*, *Tekken*, or *Mortal Kombat* focus purely on *Combat*, with *Meta Goals* of unlocking new characters or new costumes.

Instantiates: Attention Swapping, Aim & Shoot, Conflict, Randomness, Imperfect Information, Timing, Player Elimination, Perceivable Margins, Higher-Level Closures as Gameplay Progresses, Collaborative Actions, Resource Management, Dexterity-Based Actions, Budgeted Action Points, Risk/Reward, Tradeoffs, Tension

Modulates:

Instantiated by: Eliminate, Capture, Area Control, Enemies

Modulated by: Damage, Turn-Based Games, Dice, Avatars, Units, Lives, Tournaments, Privileged Abilities, Combos, Strategic Locations, Achilles' Heels, Dedicated Game Facilitators, Real-Time Games

Potentially conflicting with:

Combos

Sets of actions that trigger additional effects than those that occur due to the individual actions.

Example: The height of jumps in game such as *Mario 64* or *Super Mario Sunshine* can be extended considerably by pressing the jump button again at the right moment after starting a jump.

Instantiates: Extended Actions, Strategic Knowledge, Rhythm-Based Actions, Smooth Learning Curves, Experimenting, Configuration, Privileged Abilities, Extra-Game Information, Timing, Extra-Game Actions, Orthogonal Unit Differentiation

Modulates: Combat, Right Level of Complexity

Instantiated by: Collaborative Actions

Modulated by: Penalties, Interruptible Actions, Illusionary Rewards, Rewards, Progress Indicators, Geometric Rewards for Investments

Potentially conflicting with:

Committed Goals

Goals that players have entered a form of contract to try and fulfill.

Example: In the board game *Ticket to Ride*, players can commit to building a railway line between cities. Once committed, the player will at the end of the game either receive a certain amount of points if successful or be penalized by the same amount if the line is not completed. A similar example can be found in the trick-based card game *Bridge*.

Instantiates: Penalties, Betrayal, Gain Information

Modulates: Ephemeral Goals, Risk/Reward, Rewards, Player-Decided Distribution of Rewards & Penalties, Area Control, Closure Points

Instantiated by: Collaborative Actions, Extra-Game Consequences, Investments

Modulated by: Risk/Reward, Unknown Goals, Negotiation, Tradeoffs

Potentially conflicting with:

Communication Channels

Communication Channels are the medium and the methods players can use to send messages to other players.

Example: Current MMORPGs usually provide many different kinds of *Communication Channels* for the players, from chat channels to predefined gestures for the players' *Avatars*. Players can, of course, use *Communication Channels*, such as IRC and even telephones, which are not part of the game system itself.

Instantiates: Direct Information, Indirect Information, Uncertainty of Information

Modulates: Real-Time Games, Social Organizations, Asynchronous Games, Synchronous Games, Public Information

Instantiated by: Dedicated Game Facilitators

Modulated by: Asymmetric Abilities

Potentially conflicting with:

Competence Areas

Players have or can develop an area of specialty within a game.

Example: class-based multiplayer first-person shooters such as *Team Fortress Classic* or *Return to Castle Wolfenstein: Enemy Territory* allows players to play one class and develop their expertise as a member of that class.

Instantiates: Social Statuses, Game Mastery

Modulates: Dynamic Alliances, Cooperation, Social Organizations, Team Development, Multiplayer Games

Instantiated by: Team Play, Orthogonal Unit Differentiation, Privileged Abilities, New Abilities, Construction, Characters, Skills, Planned Character Development, Empowerment, Creative Control, Polyathlons

Modulated by: Varied Gameplay, Improved Abilities, Team Balance

Potentially conflicting with: Ability Losses, Team Balance

Competition

Competition is the struggle between players or against the game system to achieve a certain goal where the performance of the players can be measured at least relatively.

Example: Many games based on race have indirect *Competition* between the players to reach a certain position in the game as fast as possible. The performance of the players is measured by timing each player's race.

Instantiates: Social Statuses, Conflict, Tension

Modulates: Social Statuses, Social Interaction, Alliances, Dynamic Alliances

Instantiated by: Shared Resources, Bidding, Incompatible Goals, Excluding Goals, Trading, Last Man Standing, Overcome, Race, Ghosts, Enemies, King of the Hill, Red Queen Dilemmas, Rewards

Modulated by: Collaborative Actions, Mutual Goals, Shared Rewards, Symmetric Goals, Individual Rewards, Tiebreakers, Asymmetric Goals, Unknown Goals, Alliances, Social Dilemmas, Social Organizations, Agents, Cooperation, Player Balance

Potentially conflicting with: Experimenting

Conceal

Conceal is the goal of trying to hinder other players ability to gain information.

Example: The game *Zendo* allows the master to secretly make a rule for how differently colored pyramids should be arranged to have Buddha nature, and the goal of the students is to try and extrapolate the rule from experiments.

Instantiates: Continuous Goals, Unknown Goals, Replayability, Preventing Goals

Modulates: Survive

Instantiated by: Imperfect Information, Asymmetric Information

Modulated by: Red Herrings, Freedom of Choice, Creative Control

Potentially conflicting with:

Configuration

Configuration is the goal of forming a spatial, temporal, or logical arrangement of game elements.

Example: *Poker*, where winning rounds consists of having the rarest set of a set of predetermined *Configuration* s.

Instantiates: Hovering Closures, Selectable Sets of Goals, Collection, Puzzle Solving

Modulates: Symmetry, Capture

Instantiated by: Connection, Enclosure, Alignment, Combos

Modulated by: Rhythm-Based Actions, Timing, Gain Ownership, Imperfect Information

Potentially conflicting with:

Conflict

In conflict, two or more parties, often players or players against the game system, have goals, that cannot be satisfied together.

Example: In *Chess*, the *Conflict* situation is clear: the two players try to checkmate each other's king, and the winner is the first player able to do that.

Instantiates: Tension, Emotional Immersion

Modulates: Attention Swapping, Social Dilemmas, Social Organizations

Instantiated by: Role Reversal, Combat, Betting, Tiebreakers, Interferable Goals, Preventing Goals, Excluding Goals, Incompatible Goals, Last Man Standing, King of the Hill, Race, Transfer of Control, Overcome, Player Elimination, Betrayal, Competition, Tournaments, Rescue, Enemies, Gain Ownership, Eliminate

Modulated by: Dedicated Game Facilitators, Individual Rewards, Ownership, Tiebreakers, Agents, Symmetric Goals, Lives, Symmetric Information, Shrinking Game World

Potentially conflicting with: Collaborative Actions, Mutual Goals, Shared Rewards, Supporting Goals, Uncertainty of Information, Imperfect Information, Cooperation

Connection

Linking or spatially positioning game elements to each other so that they have a physical relation.

Example: The gameplay in *TwixT* is slightly different as the played pieces are not directly next to each other but placed in "knights move" apart and connected by a line which may not be in *Contact* with the opposing player's lines.

Instantiates: Configuration, Progress Indicators

Modulates: Capture, Alignment

Instantiated by: Enclosure

Modulated by:

Potentially conflicting with:

Consistent Reality Logic

Consistent Reality Logic governs that the game elements, the player actions and their consequences, and the game events are consistent.

Example: *The Sims*, one of the most popular computer games ever, takes some of the features of suburban life and blends them into a consistent totality. The play experience is intuitive, seamless, and fluid. This is partly because of a great user interface but also because the *Consistent Reality Logic* of *The Sims* is extremely well constructed. Even though the player actions do not always have a direct counterpart in the real world, the consequences are life-like and consistent.

Instantiates: Cognitive Immersion, Emotional Immersion, Immersion, Predictable Consequences

Modulates: Game World Navigation, Indirect Information, Penalties, Game Pauses

Instantiated by: Levels, Inaccessible Areas, Symmetry, Alternative Reality, Construction

Modulated by: Avatars, Character Development, Units, Downtime, Improved Abilities, Ultra-Powerful Events, Identification, Narrative Structures, Games within Games, Tools, Storytelling

Potentially conflicting with: Cameras, God's Finger, Invisible Walls, Ability Losses, New Abilities, Spawning, Extra-Game Information, Clues, Rewards, Easter Eggs, Lives

Construction

The action of introducing new game elements that are presented as intentional constructions into the Game World.

Example: Massively multiplayer online roleplaying games usually allow players to construct houses by buying them and construct items through actions. Text-based multiplayer dungeons take this further by letting high-level players create new areas in the *Game World* and program the functionality of areas and game elements.

Instantiates: Competence Areas, Surprises, Exploration, Constructive Play, Experimenting, Player Constructed Worlds, Preventing Goals, Investments, Player Defined Goals, Freedom of Choice, Creative Control, Trading, Gain Ownership, Consistent Reality Logic

Modulates: Persistent Game Worlds, Game World, Alternative Reality

Instantiated by: Producers, Tile-Laying

Modulated by: Producers, Resources, Privileged Abilities

Potentially conflicting with:

Constructive Play

Constructive Play is based on putting game elements together to construct new kinds of game element configurations, which might have different emergent characteristics.

Example: *SodaPlay* (*http://www. sodaplay. com*) allows players to build models out of mass points, which can be connected with springs. The system also allows the players to change parameters of the world such as gravity and friction. The players can then let these models loose in animated simulations. Even though the basic elements of the system are simple, the possible combinations are huge.

Instantiates: Cognitive Immersion

Modulates: Player Constructed Worlds, Sensory-Motoric Immersion, Experimenting

Instantiated by: Collaborative Actions, Construction, Creative Control, Right Level of Complexity, Team Play, Cooperation, Asymmetric Abilities

Modulated by:

Potentially conflicting with:

Consumers

A game element, usually some kind of a resource, is consumed as a consequence of a player action, certain game element configuration, or other type of a game event.

Example: in fantasy roleplaying games the hit points of the character are consumed when the character is hurt, for example, in a melee combat.

Instantiates: Producer-Consumer, Tension, Eliminate, Investments, Tradeoffs

Modulates: Deadly Traps, Cards, Resource Management, Resources, Eliminate, Enemies

Instantiated by:

Modulated by: Damage

Potentially conflicting with:

Contact

The goal of having two or more elements have physical contact with each other.

Example: Chasing games, such as *Tag*, are probably the best known games employing *Contact* as a basic goal.

Instantiates: Incompatible Goals, Gain Ownership, Area Control

Modulates: Herd, Capture, Eliminate

Instantiated by: Traverse

Modulated by:

Potentially conflicting with:

Container

Container is a game element that can store other game elements.

Example: the player's inventory in most computer roleplaying games is a *Container* that can store different kinds of game elements, even other *Containers* such as backpacks and purses.

Instantiates: Stimulated Planning, Limited Resources, Freedom of Choice

Modulates: Resource Management, Converters, Resources, Producer-Consumer

Instantiated by: Card Hands, Drawing Stacks

Modulated by:

Potentially conflicting with:

Continuous Goals

Goals that require the player to maintain a subset of a certain game state within certain limits.

Example: the goal for the king in *King of the Hill* is to maintain the game state of being the king while the other players have the goal of changing that game state. The same situation appears in *Tag*, but reversed; the chasing player, "it", has a goal to change the game state by role reversalwhile the other players try to maintain the state.

Instantiates: Hierarchy of Goals, Tension, Hovering Closures

Modulates: Race, Penalties, Rewards

Instantiated by: Lives, Score, Evade, Conceal, Guard, Survive, King of the Hill, Reconnaissance, Preventing Goals, Indirect Control, Extended Actions, Ability Losses, Area Control, Planned Character Development

Modulated by: Goal Points, Time Limits

Potentially conflicting with:

Controllers

Controllers are game elements fixed in particular locations in the Game World that allow players to perform actions that would not be possible otherwise.

Example: Abstract *Controllers* can be found in *Return to Castle Wolfenstein: Enemy Territory* as players can construct bridges, command centers, and towers in certain places.

Instantiates: Ultra-Powerful Events, Strategic Locations, Resource Locations

Modulates: Renewable Resources, Gain Ownership, Moveable Tiles, Area Control

Instantiated by: Buttons

Modulated by: Resource Generators, Tools, Helpers

Potentially conflicting with:

Converters

Converter produces different types of game elements from other game elements, typically from other resources. In essence, a Converter transforms game elements into other game elements.

Example: the opposing end of the *Chess* board is a *Converter* that converts pawns to queens.

Instantiates: Producer-Consumer, Stimulated Planning, Varied Gameplay, Empowerment, Freedom of Choice, Tradeoffs

Modulates: Cards, Resource Management, Game World, Renewable Resources, Tools, Right Level of Complexity

Instantiated by: Bidding

Modulated by: Container

Potentially conflicting with:

Cooperation

Players cooperate, i.e., coordinate their actions and share resources, in order to reach goals or subgoals of the game.

Example: MMORPG sections where there is no possibility for destructive player versus player actions, such as attacking or stealing, encourage *Cooperation* as the possibility of *Betrayal* is lessened. Further, a player that does not cooperate can lose compared to the other players if all the other players collaborate.

Instantiates: Constructive Play, Alliances, Betrayal, Social Interaction

Modulates: Competition, Tension, Dynamic Alliances, Team Play

Instantiated by: Collaborative Actions, Shared Rewards, Team Play, Mutual Goals

Modulated by: Social Statuses, Competence Areas, Shared Resources, Bidding, Trading, Delayed Reciprocity, Individual Rewards, Social Dilemmas, Social Organizations

Potentially conflicting with: Conflict, Betrayal

Creative Control

Players have the ability to be creative within the Game World.

Example: Many roleplaying games allow players to have *Creative Control* over the creation of their characters, as well as how the character develops over time. Even the somewhat limited *Creative Control* of choosing the *Avatar's* appearance in *Anarchy Online*, allows the players to express themselves.

Instantiates: Social Statuses, Competence Areas, Stimulated Planning, Constructive Play, Emotional Immersion, Empowerment, Investments, Illusion of Influence, Identification, Freedom of Choice, Extra-Game Consequences, Ownership

Modulates: Never Ending Stories, Multiplayer Games, Conceal, Persistent Game Worlds, Narrative Structures, Player Constructed Worlds

Instantiated by: Planned Character Development, Construction, Player Defined Goals, Characters, Game Masters, Roleplaying, Storytelling, Extra-Game Actions, Right Level of Complexity

Modulated by:

Potentially conflicting with:

Cut Scenes

Sequences of storytelling where players cannot act within the game.

Example: *Wing Commander III* has one of the most ambitious uses of *Cut Scenes* in games. These scenes were used in between flight missions to put the player's character in situations of choice and then give indications of the effect of the choices.

Instantiates: Surprises, Strategic Knowledge, Stimulated Planning, Downtime, Ultra-Powerful Events, Narrative Structures, Disruption of Focused Attention, Game Pauses, Game State Overview, Storytelling

Modulates: Real-Time Games, Goal Indicators, Levels, Alternative Reality, Perceived Chance to Succeed, Single-Player Games

Instantiated by: Dedicated Game Facilitators

Modulated by: Game Masters

Potentially conflicting with: Illusion of Influence

Damage

Effects from actions or events that can lead to negative consequences.

Example: In the board game *RoboRally* the first points of *Damage* reduced the number of cards received each round. However, more *Damage* makes some cards be repeated each turn and severely limit the possible actions each turn. Even more *Damage* destroys the robot.

Instantiates: Predictable Consequences, Randomness, Orthogonal Unit Differentiation, Tension

Modulates: Strategic Knowledge, Lives, Deadly Traps, Combat, Units, Evade, King of the Hill, Consumers, Resources, Risk/Reward, Eliminate, Skills, Surprises, Characters

Instantiated by: Deadly Traps

Modulated by: Penalties, Achilles' Heels, Status Indicators, Ability Losses, Downtime, Renewable Resources

Potentially conflicting with:

Deadly Traps

Deadly Traps are game events that kill Avatars and Units if they are within the area of effect of the trap.

Example: The tracks in *Super Monkey Ball* are hovering high above the ground, effectively surrounding the tracks with a *Deadly Trap.*

Instantiates: Damage, Rhythm-Based Actions, Time Limits, Surprises, Movement Limitations, Tension, Leaps of Faith, Memorizing, Ultra-Powerful Events, Timing

Modulates: Evade, Exploration, Reconnaissance, Inaccessible Areas, Lives, Units, Maneuvering, Game World, Movement, Eliminate, Guard, Rescue

Instantiated by: Shrinking Game World

Modulated by: Damage, Outstanding Features, Penalties, Consumers

Potentially conflicting with: Safe Havens

Decreased Abilities

Players' chance of succeeding with an action as a function within the game is decreased, or the calculated effect the action has in the game decreased.

Example: Being hit by an ice cube or polygon ball weapon in the *Monkey Race 2* party game in *Super Monkey Ball 2* significantly reduces players' top speed and ability to steer.

Instantiates: Penalties

Modulates: Units, Player Balance, Risk/Reward, Right Level of Difficulty, Perceived Chance to Succeed, Characters, Skills, Orthogonal Unit Differentiation, Player Killing, Limited Resources, Right Level of Complexity, Improved Abilities

Instantiated by: Non-Renewable Resources, Limited Resources

Modulated by: Time Limits, Improved Abilities, Balancing Effects

Potentially conflicting with: Illusion of Influence, Perceived Chance to Succeed, Freedom of Choice

Dedicated Game Facilitators

Games that have machines or people who perform actions and provide choices so that players can play a game.

Example: game masters in tabletop roleplaying games are examples of people who can be considered both *Dedicated Game Facilitators* and players. Game Masters in tabletop war games provide similar functions as their counterparts in roleplaying games, but usually do not control game elements and are thus not considered players.

Instantiates: Surprises, Tick-Based Games, Unknown Goals, Smooth Learning Curves, Ultra-Powerful Events, Narrative Structures, Imperfect Information, Asynchronous Games, Persistent Game Worlds, Communication Channels, Balancing Effects, Cut Scenes, Turn Taking, The Show Must Go On, Save-Load Cycles, Enemies, Storytelling, Agents

Modulates: Conflict, Combat, Turn-Based Games, Never Ending Stories, Multiplayer Games, Real-Time Games, Experimenting, Downtime, Game World, Synchronous Games, Betting, Characters, Single-Player Games, Replayability

Instantiated by: Game Masters

Modulated by:

Potentially conflicting with: Downtime, Self-Facilitated Games, Public Information

Delayed Effects

The effects of actions and events in games do not occur directly after the actions or events have started.

Example: The activation of the most powerful weapons in first-person shooters usually takes some time from activation to the time it fires, usually to balance them somewhat against the other weapons in the game.

Instantiates: Time Limits, Strategic Knowledge, Stimulated Planning, Anticipation, Memorizing, Balancing Effects, Tradeoffs, Timing, Hovering Closures, Tension

Modulates: Quick Games, Betrayal, Interruptible Actions, Luck

Instantiated by: Extended Actions, Investments, Ultra-Powerful Events, Delayed Reciprocity, Betting

Modulated by: Progress Indicators, Uncertainty of Information, Randomness

Potentially conflicting with:

Delayed Reciprocity

There is a time delay in social exchange situations, i.e. the whole exchange is not immediate, something is given now and the return is to be paid back some time in the future.

Example: in *Diplomacy* the player can order his armies to support also other players' army activities. This also means that if, for example, Italy supports a French Army in attacking Spain, Italy does not get anything concrete in return immediately (well, except if Spain was attacking Italy too). France can give support to Italy later, but is not obliged to by the rules.

Instantiates: Leaps of Faith, Anticipation, Social Dilemmas, Uncommitted Alliances, Tension, Hovering Closures, Delayed Effects

Modulates: Cooperation, Betrayal, Social Interaction

Instantiated by: Collaborative Actions, Player Decided Results, Mutual Goals, Shared Rewards, Social Organizations, Individual Rewards

Modulated by: Trading

Potentially conflicting with:

Delivery

Delivery consists of moving a certain game element to another specified game element or place within the game space.

Example: capture the flag variants of first-person shooters have the goal of gaining access of the other team's flag and carrying it to one's own capture point.

Instantiates: Pick-Ups, Goal Points, Traverse, Movement

Modulates: Narrative Structures, Trading

Instantiated by: Herd

Modulated by: Stealth, Overcome, Evade, Gain Ownership, Aim & Shoot

Potentially conflicting with:

Dexterity-Based Actions

Actions whose success or failure depends on some form of dexterity, in most cases, eye-hand coordination.

Example: Moving *Avatars* in first-person shooters can be seen as a *Dexterity-Based Action*, since players can get feedback quickly enough to feel immersed in the virtual environment.

Instantiates: Spatial Immersion, Game Mastery, Sensory-Motoric Immersion

Modulates: Overcome, Real-Time Games, Polyathlons

Instantiated by: Aim & Shoot, Combat, Extended Actions, Maneuvering, Obstacles, Movement

Modulated by: Surprises, First-Person Views, Third-Person Views, Progress Indicators, Indirect Control

Potentially conflicting with: Disruption of Focused Attention

Dice

Dice are physical game elements that are used to randomize an outcome from a predefined set of outcomes, each outcome having the same likelihood.

Example:

Instantiates: Strategic Knowledge, Focus Loci, Randomness, Luck

Modulates: Combat, Skills

Instantiated by:

Modulated by: Balancing Effects

Potentially conflicting with:

Diminishing Returns

The returns for similar investments decrease as the player progresses in the game.

Example: In many roleplaying games, raising skills and abilities require more experience points, or other types of investments, for the higher skill and ability levels.

Instantiates: Player Balance, Balancing Effects

Modulates: Character Development, Resources, Transfer of Control, Investments, Rewards, Varied Gameplay, Skills, Improved Abilities, Renewable Resources, Geometric Rewards for Investments, Mule, Arithmetic Rewards for Investments

Instantiated by:

Modulated by:

Potentially conflicting with: Geometric Rewards for Investments, Arithmetic Rewards for Investments

Direct Information

Players have access to information about the game state in the same format that the game state is stored

Example: Classical board games such as *Go* and *Chess* have their game state stored by the spatial relations of the physical game pieces and the board.

Instantiates: Perceivable Margins, Stimulated Planning, Puzzle Solving

Modulates: Status Indicators, Goal Indicators, Progress Indicators, Outcome Indicators, Helpers, Clues, Trading, Bidding, Bluffing

Instantiated by: Perfect Information, Communication Channels

Modulated by: Save-Load Cycles

Potentially conflicting with: Indirect Information, Imperfect Information, Uncertainty of Information, Emotional Immersion, Red Herrings

Discard Piles

The Discard Pile is the area or stack where cards or tiles are placed after they have been used.

Example:

Instantiates: Stimulated Planning, Memorizing

Modulates: Tiles, Analysis Paralysis, Cards

Instantiated by:

Modulated by:

Potentially conflicting with:

Disruption of Focused Attention

That players' attention is forcefully moved from one aspect of the game to another.

Example: the effect of activating buttons in adventure games or first-person shooters can be shown by short cut scenes. They can show areas currently not observed by the players and can thereby focus their attention on areas that would otherwise go unnoticed.

Instantiates: Attention Swapping, Spatial Immersion, Game State Overview

Modulates: Right Level of Difficulty

Instantiated by: Red Herrings, Enemies, Game State Overview, Cut Scenes, Surprises, Alarms

Modulated by: Real-Time Games

Potentially conflicting with: Aim & Shoot, Immersion, Sensory-Motoric Immersion, Cognitive Immersion, Dexterity-Based Actions

Downtime

The player cannot directly affect the outcome of the game for a period of time.

Example: Many team-based multiplayer first-person shooters, for example *Team Fortress Classic* or *Return to Castle Wolfenstein: Enemy Territories*, have a certain amount of time where players can move their *Avatar* in the game environment before the game begins. This time, which allows more players to be logged on at the beginning of the actual game, cannot be used to affect the outcome of the game with the exception of minor differences in starting position.

Instantiates: Individual Penalties, Anticipation, Penalties, Tension

Modulates: Damage, Unknown Goals, Multiplayer Games, Closure Points, Consistent Reality Logic, Single-Player Games

Instantiated by: Early Elimination, Spectators, Extended Actions, Cognitive Immersion, Movement Limitations, Multiplayer Games, Turn-Based Games, Synchronous Games, Asynchronous Games, Analysis Paralysis, Ultra-Powerful Events, Save-Load Cycles, Cut Scenes, Ability Losses, Spawning, Turn Taking, Player Killing, Player Elimination, Game Pauses

Modulated by: Tick-Based Games, Dedicated Game Facilitators, Right Level of Complexity, Limited Resources, Game Masters

Potentially conflicting with: Time Limits, Ephemeral Goals, Real-Time Games, Negotiation, Tension, Freedom of Choice, Game Masters, Dedicated Game Facilitators, Limited Planning Ability, Immersion

Drawing Stacks

A Drawing Stack is the collection of cards or tiles that are drawn in sequence by the players.

Example: A special case can be found in collectable card games, such as *Magic: The Gathering*, where players get to construct their own *Drawing Stacks* before the gameplay begins.

Instantiates: Tile-Laying, Container, Randomness

Modulates: Tiles, Cards

Instantiated by:

Modulated by:

Potentially conflicting with:

Dynamic Alliances

The alliances are dynamic in nature, that is, new alliances can be created, old alliances can die out and the characteristics, especially the player composition, of an alliance can change during the game play.

Example: in *Diplomacy* the *Alliances* change and shift depending on the game situation. First, Italy can be in the same *Alliance* as Turkey and France against the naval power of Great Britain, but later when France starts a war with Germany both Great Britain and Italy make a secret pact to attack France after she has moved her armies to the German border.

Instantiates: Role Reversal, Varied Gameplay, Social Interaction

Modulates: Alliances, Team Development, Uncommitted Alliances, Team Play

Instantiated by: Collaborative Actions, Penalties, Last Man Standing, Player-Decided Distribution of Rewards & Penalties, King of the Hill, Score

Modulated by: Competence Areas, Competition, Safe Havens, Cooperation, Social Dilemmas, Negotiation

Potentially conflicting with:

Dynamic Goal Characteristics

Certain characteristics of the goals, usually the information available to the players, change during gameplay.

Example: The card game Fluxx has the current winning goal represented by a played card. Although the game can be said to have the static goal of fulfilling the goal card criteria, the specific winning goal changes as soon as a player plays a new goal card.

Instantiates: Perceivable Margins, Resource Generators, Unknown Goals, Imperfect Information

Modulates: Hierarchy of Goals, Planned Character Development, Collection, Narrative Structures, Excluding Goals

Instantiated by: Role Reversal

Modulated by:

Potentially conflicting with:

Early Elimination

There is a possibility that a player's game session may finish before the other players.

Example: in *Counter-Strike* the players can be killed in very early phases of the game round and they remain outside the play for the rest of the round. Some configurations of *Counter-Strike*, however, allow the eliminated players to observe what is happening during the game.

Instantiates: Downtime, Tension

Modulates: Multiplayer Games

Instantiated by: Player Elimination

Modulated by: Spectators, Spawning, Time Limits

Potentially conflicting with: Spawning

Easter Eggs

Surprises in the game that are not related to the game.

Example: The whole game*Maniac Mansion* is included as an *Easter Egg* in its sequel *Day of the Tentacle*.

Instantiates: Surprises, Trans-Game Information, Optional Goals, Replayability, Player Defined Goals

Modulates: Exploration, Game World, Right Level of Difficulty, Single-Player Games

Instantiated by: Resources, Games within Games

Modulated by: Clues

Potentially conflicting with: Consistent Reality Logic

Eliminate

Eliminate is the goal to remove a game element from its location in the game space.

Example: The single-player puzzle game *Peg Solitaire* consists of eliminating all game elements from the game board save one.

Instantiates: Aim & Shoot, Conflict, Combat, Penalties, Last Man Standing, Enemies, Preventing Goals, Higher-Level Closures as Gameplay Progresses, Boss Monsters, Player Elimination

Modulates: Resource Generators, Units, Capture

Instantiated by: Consumers

Modulated by: Damage, Deadly Traps, Bidding, Consumers, Contact, Survive, Evade

Potentially conflicting with:

Emotional Immersion

Being emotionally affected by the events that occur in a game.

Example: the darkness, loneliness and threat of violence are the primary ingredients in setting the mood in games such as the *Doom* series.

Instantiates: Immersion, Anticipation

Modulates: Risk/Reward

Instantiated by: Surprises, Exploration, Penalties, Player Defined Goals, Consistent Reality Logic, Transfer of Control, Tension, Anticipation, Betting, Characters, Narrative Structures, Creative Control, Gain Ownership, Hovering Closures, Ownership, Roleplaying, Storytelling, Social Interaction, Game Masters, Conflict, Social Dilemmas, Alternative Reality, Perceived Chance to Succeed, Illusion of Influence, Empowerment, Game Mastery, Player Constructed Worlds, Persistent Game Worlds, Identification, Extra-Game Actions, Betrayal, Rewards, Area Control, Lives, Freedom of Choice

Modulated by: Indirect Information, Resources, Bluffing, Handles

Potentially conflicting with: Attention Swapping, God Views, Direct Information, Cognitive Immersion, Avatars, Clues

Empowerment

Players feel that they can affect the events and the final outcome of a game.

Example: roleplaying games allow players the highest levels of *Empowerment*, as players and game masters can construct entire worlds, invent and play out stories within them, and change the rules to fit the participants of the game.

Instantiates: Competence Areas, Emotional Immersion, Higher-Level Closures as Gameplay Progresses

Modulates: Gain Competence, Red Queen Dilemmas, Team Play, Narrative Structures

Instantiated by: Social Statuses, Strategic Knowledge, Stimulated Planning, Player Decided Results, Self-Facilitated Games, Converters, Producers, Freedom of Choice, Player Constructed Worlds, Game Mastery, Memorizing, Privileged Abilities, New Abilities, Improved Abilities, Creative Control, Right Level of Difficulty, Game Masters

Modulated by: Time Limits, Role Reversal

Potentially conflicting with: Player Balance, Team Balance

Enclosure

Enclosure is the surrounding of game elements by a continuous line or wall.

Example: The board game *Carcassonne* (Klaus-Jürgen Wrede 2000) is a clear example of using *Enclosure* in a couple of different ways: the building of towns where rewards are not given until the town walls enclose the area inside; cloisters that have to be surrounding by tiles to give points; and fields that may be enclosed to guarantee control.

Instantiates: Connection, Configuration

Modulates: Gain Ownership, Capture

Instantiated by:

Modulated by:

Potentially conflicting with:

Enemies

Enemies are avatars and units that hinder the players trying to complete the goals.

Example: In *Soul Calibur II*, the combat opponents are straightforward *Enemies*, which try to hinder the players' progress in the game.

Instantiates: Attention Swapping, Aim & Shoot, Conflict, Combat, Competition, Alliances, Overcome, Social Dilemmas, Reconnaissance, Preventing Goals, Tension, Disruption of Focused Attention

Modulates: Exploration, Game World, Traverse, Evade, Levels, Narrative Structures, Right Level of Difficulty, Perceived Chance to Succeed, Maneuvering

Instantiated by: Avatars, Units, Agents, Dedicated Game Facilitators, Game Masters, Characters, Eliminate

Modulated by: Consumers, Privileged Movement, Identification, Orthogonal Unit Differentiation, Gain Ownership, Skills, Alarms

Potentially conflicting with:

Ephemeral Goals

Goals that have a dynamic existence, that is, they can appear and disappear during the gameplay; their appearance not necessarily known at the beginning of the game and their disappearance may not be due to their completion or them having become impossible.

Example: Many tabletop and computer roleplaying games use random encounters during the gameplay. These encounters are, as the name suggests, created randomly usually from a predefined set of characteristics. The most usual random encounter challenge still seems to be to defeat a group of wandering monsters or other enemies.

Instantiates: Player Defined Goals

Modulates: Hierarchy of Goals, Selectable Sets of Goals, Narrative Structures, Alternative Reality

Instantiated by: Resource Generators, Power-Ups, Game Masters

Modulated by: Time Limits, Penalties, Committed Goals, Optional Goals, Unknown Goals, Games within Games, Rewards

Potentially conflicting with: Predefined Goals, Player Balance, Narrative Structures, Right Level of Difficulty, Downtime

Evade

This is the goal to avoid being captured or hit.

Example: *Pac-Man* has the goal of avoiding the ghosts while collecting the yellow dots.

Instantiates: Continuous Goals, Movement, Tension, Preventing Goals

Modulates: Delivery, Capture, Traverse, Aim & Shoot, Eliminate

Instantiated by: Stealth, Aim & Shoot

Modulated by: Damage, Deadly Traps, Time Limits, Movement Limitations, Puzzle Solving, Enemies, Lives, Units

Potentially conflicting with:

Excluding Goals

Completing an Excluding Goal makes the completion of other goals in the game meaningless or impossible.

Example: *Star Wars: Knights of the Old Republic* is a single player adventure game, where finishing certain goals exclude other possible goals as the player character moves towards being good or evil.

Instantiates: Conflict, Competition, Incompatible Goals, Closure Points

Modulates: Hierarchy of Goals

Instantiated by: Overcome, Race, Preventing Goals, Tiebreakers

Modulated by: Selectable Sets of Goals, Dynamic Goal Characteristics

Potentially conflicting with: Tied Results, Shared Rewards

Experimenting

Performing actions to learn how the rules of cause and effect work in a game.

Example: Creating potions in *Morrowind* can be an experiment if the player is not an alchemist master, as not all effects of ingredients are known until one reaches that level.

Instantiates: Strategic Knowledge, Leaps of Faith, Cognitive Immersion, Stimulated Planning, Smooth Learning Curves, Game Mastery, Risk/Reward, Tension

Modulates: Right Level of Difficulty

Instantiated by: Predictable Consequences, Achilles' Heels, Save-Load Cycles, Reversability, Imperfect Information, Gain Information, Construction, Puzzle Solving, Combos, Right Level of Complexity, Illusionary Rewards

Modulated by: Safe Havens, Constructive Play, Dedicated Game Facilitators, Quick Games

Potentially conflicting with: Competition, Irreversible Actions, Non-Renewable Resources

Exploration

The goal of learning the layout of the Game World, or locating specific parts or objects in it.

Example: Games in the *Civilization* series start with the players knowing very little about the *Game World*. A prerequisite for being able to plan on a higher level against the other players or how to expand one's civilization depends on completing as much *Exploration* of the world as possible.

Instantiates: Game World Navigation, Uncertainty of Information, Surprises, Traverse, Emotional Immersion, Movement, Race, Gain Information

Modulates: Memorizing, Single-Player Games

Instantiated by: Shared Resources, Limited Foresight, Resource Generators, Secret Resources, Illusionary Rewards, Tile-Laying, Construction, Imperfect Information, Game World

Modulated by: Deadly Traps, Goal Points, Outstanding Features, Obstacles, Traces, Clues, Enemies, Easter Eggs, Surprises, Resources, Fog of War, Game State Overview, Strategic Locations

Potentially conflicting with: Replayability

Extended Actions

Actions that take so long to complete that they require players to miss opportunities to perform other actions in order to complete them.

Example: Buildings in the *Age of Empires* series let players build *Units*, but the production of these *Units* takes time, and while they are being produced, no new production of units can start.

Instantiates: Attention Swapping, Continuous Goals, Investments, Ultra-Powerful Events, Balancing Effects, Stimulated Planning, Hovering Closures, Tension, Risk/Reward, Downtime, Irreversible Actions, Delayed Effects, Freedom of Choice, Perceivable Margins, Area Control, Rhythm-Based Actions, Dexterity-Based Actions

Modulates: Game Mastery, Producers, Collaborative Actions

Instantiated by: Aim & Shoot, Combos, No-Ops

Modulated by: Progress Indicators, Focus Loci, Interruptible Actions, Geometric Rewards for Investments, Illusionary Rewards, Units

Potentially conflicting with: Freedom of Choice

Extra-Game Actions

Actions that are motivated by the game state or game design but do not affect the game state as such.

Example: loading and saving in computer games are *Extra-Game Actions* which save or restores the entire game state of a game instance. As the whole game state is affected these actions are not considered parts of gameplay but rather ways of setting up play sessions.

Instantiates: Meta Games, Stimulated Planning, Emotional Immersion, Investments, Creative Control, Freedom of Choice, Extra-Game Consequences

Modulates: Cognitive Immersion, Multiplayer Games, Planned Character Development, Team Development, Game State Overview

Instantiated by: Strategic Knowledge, Collaborative Actions, Self-Facilitated Games, Cameras, Book-Keeping Tokens, Persistent Game Worlds, Save-Load Cycles, Negotiation, Game Pauses, Combos, Storytelling

Modulated by: Spectators, Reversability, Public Information

Potentially conflicting with: Immersion

Extra-Game Consequences

Consequences that is due to actions within games or based on game states of games but that do not affect the game state or how the game state is perceived.

Example: the existence of persistent online game worlds have made it possible to buy and sell characters and equipments through Internet auctioning sites. This makes character development and the gaining and losing of equipment in these games have potential *Extra-Game Consequences*.

Instantiates: Meta Games, Committed Goals

Modulates: Investments, Penalties, Rewards

Instantiated by: Social Statuses, Character Development, Trans-Game Information, Illusionary Rewards, Persistent Game Worlds, Creative Control, Player Defined Goals, Score, Betting, Extra-Game Actions, Tools, Narrative Structures

Modulated by: Quick Games, Investments

Potentially conflicting with:

Extra-Game Information

Information provided within the game that concerns subjects outside the Game World.

Example: *The Legend of Zelda: The Wind Waker*, like other games in the series, includes a significant amount of *Extra-Game Information* about how to perform the actions in the game. This information is portioned out over the game so that the complexity of the gameplay is simple in the beginning and grows as the player becomes more experienced.

Instantiates: Strategic Knowledge, Smooth Learning Curves, Memorizing, Illusionary Rewards

Modulates: Illusion of Influence, Alternative Reality, Right Level of Complexity, Right Level of Difficulty

Instantiated by: Combos

Modulated by: Storytelling

Potentially conflicting with: Immersion, Consistent Reality Logic

First-Person Views

Players are shown the game world as if they were inside it

Example: As the name indicates, all first-person shooters make use of *First-Person Views*.

Instantiates: Spatial Immersion, Fog of War

Modulates: Aim & Shoot, Maneuvering, Game State Overview, Dexterity-Based Actions, Public Information, Game World

Instantiated by: Avatars

Modulated by: Status Indicators

Potentially conflicting with: God Views, Game State Overview

Focus Loci

The game elements through which a player's actions are taken.

Example: Various types of mouse cursors used in real-time strategy games and *Sims* games are *Focus Loci* that allow players to move between units and characters, which in their turn are also *Focus Loci*.

Instantiates: Spatial Immersion, Cognitive Immersion, Sensory-Motoric Immersion, Indirect Control, Identification

Modulates: Attention Swapping, Extended Actions, Alternative Reality, Area Control

Instantiated by: Cards, God's Finger, Book-Keeping Tokens, Third-Person Views, Units, Characters, Dice

Modulated by: Status Indicators, New Abilities

Potentially conflicting with:

Fog of War

The player has no information about game world areas that are not being observed or have not yet been explored

Example: *Metroid Fusion* reveals most of the layout of each level and even explicitly indicates the places the player has already visited. The game further indicates the location of the power-ups on the overview map, but not the exact location on the play area. This leads to the player, sometimes frantically, trying to find the exact location of the power-up in the specified area.

Instantiates: Gain Information, Reconnaissance, Red Herrings, Memorizing

Modulates: God Views, Exploration, Imperfect Information, Guard, Game State Overview, Third-Person Views, Game World, Cameras

Instantiated by: First-Person Views

Modulated by: Asymmetric Abilities, Privileged Abilities, Orthogonal Unit Differentiation, Third-Person Views, Tile-Laying

Potentially conflicting with:

Freedom of Choice

Players have the ability to make choices in the game.

Example: Menu-based adventure-based games limit players to only a few choices throughout the entire game.

Instantiates: Game World Navigation, Cognitive Immersion, Stimulated Planning, Emotional Immersion, Empowerment, Social Dilemmas, Immersion, Replayability, Tradeoffs, Varied Gameplay, Analysis Paralysis, Reversability, Risk/Reward, Perceived Chance to Succeed

Modulates: Character Development, Multiplayer Games, Conceal, Rewards, Improved Abilities, New Abilities, Characters

Instantiated by: Extended Actions, Trading, No-Ops, Asymmetric Abilities, Resource Management, Converters, Planned Character Development, Construction, Budgeted Action Points, Optional Goals, Creative Control, Save-Load Cycles, Player Defined Goals, Selectable Sets of Goals, New Abilities, Player-Decided Distribution of Rewards & Penalties, Storytelling, Social Interaction, Extra-Game Actions, Container, Arithmetic Rewards for Investments

Modulated by: Limited Resources, Asynchronous Games, Spawning, Illusion of Influence, Asymmetric Goals

Potentially conflicting with: Collaborative Actions, Penalties, Movement Limitations, Limited Set of Actions, Downtime, Ultra-Powerful Events, Extended Actions, Shrinking Game World, Decreased Abilities, Ability Losses, Inaccessible Areas, Limited Planning Ability, Narrative Structures

Gain Competence

Gaining the ability to perform a certain action within the game.

Example: Computer-based roleplaying games, such as *Neverwinter Nights* and *Morrowind*, have many abilities, most commonly spells, that are not available to the players. Learning these abilities provides significant help in completing the games, and gaining them may become explicit goals that are the focus of player actions on the expense of the main goal.

Instantiates: Character Development, Race

Modulates:

Instantiated by: Tools, Power-Ups, Chargers, New Abilities, Improved Abilities, Privileged Abilities, Ability Losses, Asymmetric Abilities, Skills, Planned Character Development, Gain Ownership

Modulated by: Empowerment, Limited Set of Actions

Potentially conflicting with:

Gain Information

The goal of performing actions in the game in order to be able to receive information or make deductions.

Example: *Hide \& Seek*, the traditional children's game, is the archetypical example of direct use of this pattern. In the game, one of the players is the seeker whose task is to find out the other players who have had a certain amount of time to hide themselves.

Instantiates: Experimenting, Puzzle Solving, Supporting Goals, Memorizing, Uncertainty of Information

Modulates:

Instantiated by: Limited Foresight, Achilles' Heels, Fog of War, Unknown Goals, Strategic Locations, Exploration, Card Hands, Reconnaissance, Committed Goals, Secret Resources, Imperfect Information, Asymmetric Information, Puzzle Solving, Gain Ownership

Modulated by: Indirect Information, Perfect Information

Potentially conflicting with: Perfect Information

Gain Ownership

This is simply the goal to gain the ownership of a game element.

Example: *Othello* (also called *Reversi*) has the goal of gaining ownership of a majority of the game pieces, and every turn in the game involves changes in ownership.

Instantiates: Conflict, Emotional Immersion, Transfer of Control, Gain Information, Gain Competence, Collection, Betting, Area Control

Modulates: Delivery, Resource Management, Configuration, Stealth, Enemies, King of the Hill, Ownership

Instantiated by: Capture, Overcome, Construction, Strategic Locations, Ability Losses, Contact, Indirect Control

Modulated by: Goal Points, Bidding, Resource Generators, Trading, Enclosure, Strategic Locations, Renewable Resources, Betting, Clues, Tools, Pick-Ups, Resource Locations, Score, New Abilities, Improved Abilities, Controllers, Chargers

Potentially conflicting with:

Game Masters

People who act as game facilitators of game worlds for players.

Example: the game *Zendo* has a game master who secretly decides on a secret rule how differently-colored pyramids should be arranged to have Buddha nature. The players play the game by trying to extrapolate the rule from tests.

Instantiates: Surprises, Indirect Information, Limited Foresight, Player Decided Results, Self-Facilitated Games, Emotional Immersion, Ephemeral Goals, Ultra-Powerful Events, Dedicated Game Facilitators, Illusion of Influence, Balancing Effects, Persistent Game Worlds, Creative Control, Enemies, Negotiation, Tension, Empowerment, Player Constructed Worlds, Narrative Structures, Privileged Abilities, Storytelling, Social Interaction, Roleplaying, Right Level of Difficulty, Turn Taking, Perceived Chance to Succeed

Modulates: Multiplayer Games, Planned Character Development, Game World, Ability Losses, Downtime, Cut Scenes, Luck, Characters

Instantiated by:

Modulated by: Randomness

Potentially conflicting with: Downtime, Limited Set of Actions, Perceived Chance to Succeed, Randomness

Game Mastery

That one can clearly distinguish between skillful and incompetent players when they are using all their skills and abilities in a game.

Example: The actions of moving and shooting in first-person shooters, as well as coordinating activities in multiplayer versions of those games, offer such a wide range of *Game Mastery* that experts can do it mainly subconsciously, while novices might have troubles understanding what is happening in the *Game World*.

Instantiates: Social Statuses, Emotional Immersion, Empowerment, Investments, Replayability

Modulates:

Instantiated by: Competence Areas, Perceivable Margins, Collaborative Actions, Trans-Game Information, Resource Management, Rhythm-Based Actions, Overcome, Experimenting, Memorizing, Limited Resources, Puzzle Solving, Tradeoffs, Negotiation, Predefined Goals, Stimulated Planning, Timing, Dexterity-Based Actions, Risk/Reward, Strategic Knowledge, Smooth Learning Curves, Paper-Rock-Scissors, Betting, Right Level of Difficulty, Right Level of Complexity, Storytelling

Modulated by: Spectators, Extended Actions, Penalties, Asymmetric Abilities, Tournaments, Multiplayer Games, Red Queen Dilemmas, Player Balance, Illusionary Rewards, Handicaps, Rewards, Immersion, Levels, Turn Taking, Varied Gameplay, High Score Lists, Handles, Luck, Symmetry

Potentially conflicting with: Randomness, Luck

Game Pauses

The progress of game time is suspended during Game Pauses

Example: *Cut Scenes* and level changes are a form of *Game Pauses* as the progress of game time is usually suspended for a game system controlled amount of time.

Instantiates: Downtime, Extra-Game Actions

Modulates: Tick-Based Games, Turn-Based Games, Real-Time Games, Single-Player Games, Social Interaction, Tension

Instantiated by: Save-Load Cycles, Spawning, Cut Scenes

Modulated by: Time Limits, Consistent Reality Logic

Potentially conflicting with: Time Limits, The Show Must Go On

Game State Overview

Players are provided with information that extends beyond the observational abilities provided by game elements

Example: Most racing games, e. g., *Mario Kart Double Dash!!* and the *Monkey Race* party games in the *Super Monkey Ball* series, provide a small overhead map that shows the location of other players on the track.

Instantiates: Strategic Knowledge, Cognitive Immersion, Stimulated Planning, Analysis Paralysis, Disruption of Focused Attention

Modulates: Attention Swapping, Game World Navigation, Perceivable Margins, Near Miss Indicators, Exploration, Units, Game World, Reconnaissance, Puzzle Solving, Balancing Effects, Goal Indicators, Negotiation, Player Defined Goals, Preventing Goals, Progress Indicators, Outcome Indicators, Public Information, Identification, Narrative Structures

Instantiated by: God Views, Book-Keeping Tokens, Turn Taking, Disruption of Focused Attention, Score, Cut Scenes

Modulated by: Spectators, Status Indicators, Fog of War, First-Person Views, Third-Person Views, Perfect Information, Area Control, Extra-Game Actions, Alarms

Potentially conflicting with: Attention Swapping, Surprises, Limited Foresight, Leaps of Faith, First-Person Views, Reconnaissance

Game World

The environment in which the gameplay or parts of the gameplay takes place is determined by the spatial relationships of the game elements.

Example: Even though the view to the world was in 3D, the *Game World* of *Wolfenstein 3D* still remained two-dimensional [Kent01].

Instantiates: Spatial Immersion, Exploration, Immersion

Modulates: Player Balance, Camping, Roleplaying

Instantiated by: Tiles, Reconfigurable Game World, Levels

Modulated by: God Views, Deadly Traps, Goal Points, Fog of War, Resource Generators, Never Ending Stories, Converters, First-Person Views, Producers, Construction, Resources, Game State Overview, Movement, Inaccessible Areas, Tile-Laying, Game Masters, Storytelling, Player Constructed Worlds, Dedicated Game Facilitators, Easter Eggs, Secret Resources, Obstacles, Enemies, Spawn Points, Helpers, Strategic Locations, Outstanding Features, Area Control, Third-Person Views, Shrinking Game World

Potentially conflicting with:

Game World Navigation

The action of trying to move from one place in the game to another when the correct way is not obviously apparent.

Example: The maze-like levels in *Doom* and *Quake* required player to navigate within the environments to move efficiently between all parts of the levels.

Instantiates: Cognitive Immersion, Strategic Knowledge

Modulates:

Instantiated by: Movement, Spatial Immersion, Exploration, Goal Points, Freedom of Choice

Modulated by: Traces, Obstacles, Inaccessible Areas, Outstanding Features, Clues, Consistent Reality Logic, Game State Overview, Privileged Movement, Movement Limitations

Potentially conflicting with: Spatial Immersion, Leaps of Faith

Games within Games

A game which is played completely within another game.

Example: Although available as an independent game, the entire game *Maniac Mansion* could be played by getting to the right location in its sequel *Day of the Tentacle*.

Instantiates: Meta Games, Trans-Game Information, Optional Goals, Easter Eggs, Varied Gameplay

Modulates: Ephemeral Goals, Consistent Reality Logic

Instantiated by:

Modulated by:

Potentially conflicting with: Immersion

Geometric Rewards for Investments

The possible rewards grow in geometric fashion compared to the invested resources, that is, if the investment is doubled the comparable reward is more than doubled.

Example: in *Bohnanza*, a card game involving trade and luck, collecting more similar cards before cashing them in for victory points gives *Geometric Rewards for Investments* for some types of cards: 2 points for 2 similar cards, 4 points for 3 similar cards and so on.

Instantiates: Timing

Modulates: Extended Actions, Trading, Transfer of Control, Investments, Rewards, Risk/Reward, Collecting, Tension, Combos

Instantiated by:

Modulated by: Diminishing Returns, Risk/Reward

Potentially conflicting with: Player Balance, Diminishing Returns, Arithmetic Rewards for Investments

Ghosts

Ghosts are the overlay of elements and actions from previous game sessions in a current game session so that players can compare their current progress with that of the previous attempts.

Example: racing games such as *Gran Turismo 3* make use of *Ghosts* to let players compare their current play session with earlier ones, or to practice against the optimal path.

Instantiates: Competition, Trans-Game Information, Asynchronous Games

Modulates: Multiplayer Games, Race, Single-Player Games

Instantiated by:

Modulated by:

Potentially conflicting with:

Goal Indicators

Players are given information about his current goals in the game.

Example: *Chess*, *Backgammon* and other classical board games state the goals of players directly in the rules (check-mate the opponent's king, move all the pieces off the board). The position of the opponent's king in *Chess* and the location of the home base in *Backgammon* are *Goal Indicators*, which guide players' actions during the game play.

Instantiates:

Modulates: Time Limits, Public Information, Narrative Structures

Instantiated by: Goal Points

Modulated by: Direct Information, Game State Overview, Cut Scenes

Potentially conflicting with: Uncertainty of Information, Player Defined Goals

Goal Points

Goal Points are locations in the game world which the players can enter in order to complete a goal.

Example: Capture-the-Flag variants of multiplayer first-person shooters, such as in some variants of Quake and Unreal Tournament, have certain areas where the enemy flag has to be delivered for the team to score.

Instantiates: Game World Navigation, Strategic Locations, Collaborative Actions, Area Control, Goal Indicators

Modulates: Continuous Goals, Gain Ownership, Rescue, Exploration, Game World

Instantiated by: Traverse, Delivery, Herd

Modulated by: Safe Havens

Potentially conflicting with:

God Views

Players are given a view of the game independent of game elements

Example: *Populous*, as an example of a god game unsurprisingly provides players with *God Views.*

Instantiates: Game State Overview

Modulates: Attention Swapping, Public Information, Game World

Instantiated by:

Modulated by: Fog of War, Cameras

Potentially conflicting with: First-Person Views, Third-Person Views, Avatars, Spatial Immersion, Emotional Immersion, Aim & Shoot

God's Finger

A God's Finger is a game element that allows the player to affect the game world, but which cannot be affected by events in the game world itself.

Example: the cursor in god-game *Black \& White* is literally a *God's Finger*.

Instantiates: Focus Loci

Modulates: Units

Instantiated by:

Modulated by:

Potentially conflicting with: Surprises, Consistent Reality Logic

Guard

Guard is the goal to hinder other players or game elements from accessing a particular area in the game or a particular game element.

Example: *Chess* and *Stratego* are games that one loses if one fails the mission to guard a specific game element: the king in *Chess* and the flag in *Stratego*.

Instantiates: Continuous Goals, Risk/Reward, Preventing Goals

Modulates: Stealth, King of the Hill

Instantiated by:

Modulated by: Deadly Traps, Strategic Knowledge, Fog of War, Rescue, Reconnaissance, Strategic Locations, Camping, Ownership

Potentially conflicting with:

Handicaps

Making gameplay easier for certain players in order to make all players have the same chance to succeed.

Example: *Go* uses a *Handicap* system of allowing the weaker player to place a certain number of stones in the handicap points before the actual game begins in such a way that both players are challenged while playing.

Instantiates: Meta Games, Player Balance, Smooth Learning Curves, Team Balance, Balancing Effects, Perceived Chance to Succeed, Right Level of Difficulty

Modulates: Self-Facilitated Games, Multiplayer Games, Resources, Race, Game Mastery, Score, Skills

Instantiated by: Reconfigurable Game World, Asymmetric Resource Distribution, Reversability

Modulated by: Trans-Game Information, Agents, Non-Renewable Resources, Negotiation, Skills

Potentially conflicting with: Symmetry

Handles

The players are identified in the game instance, and sometimes between game instances, by short names or other at least somewhat unique identifiers.

Example: online multiplayer first-person shooters let the players enter names for their avatars. These *Handles* are used to measure and compare the performance of the individual players and in team-oriented games also to identify the other team-members. The *Handles* are not necessarily persistent from the game system point of view, but often there are sometimes severe penalties for players who try to pose as other players.

Instantiates: Social Statuses, Trans-Game Information, Identification, Social Organizations

Modulates: Emotional Immersion, Persistent Game Worlds, Team Play, Characters, Game Mastery

Instantiated by:

Modulated by:

Potentially conflicting with:

Helpers

Helpers are game elements that support the players in completing goals by giving advice or by performing actions which the players are not able to perform. They are not under any players' control, and typically do not move around in the game world.

Example: each of the games in *The Legend of Zelda* series contains several helpers from helpful grandmothers to talking boats.

Instantiates: Indirect Information, Smooth Learning Curves, Illusionary Rewards, Clues

Modulates: Red Herrings, Game World, Levels, Tools, Controllers

Instantiated by:

Modulated by: Direct Information

Potentially conflicting with: Red Herrings

Herd

Moving a game element to a location in the game without directly interacting with it.

Example: *Populous* allows players to place markers in the game world which make all the people under the player's control move towards the marker.

Instantiates: Goal Points, Delivery, Indirect Control, Movement, Preventing Goals

Modulates: Traverse, Collecting

Instantiated by:

Modulated by: Privileged Movement, Contact

Potentially conflicting with: Stealth

Hierarchy of Goals

The goals and subgoals of the game form a hierarchy.

Example: The rough goal hierarchy in *Pac-Man* is as follows: eat the pills while avoiding the ghosts, get the power pill while avoiding the ghosts, chase the ghosts or eat the pills while under the influence of the power-pill, finish levels by taking all pills on each level, and finally get into the high score list.

Instantiates: Narrative Structures, Higher-Level Closures as Gameplay Progresses, Strategic Knowledge

Modulates: Save Points

Instantiated by: Continuous Goals, Predefined Goals, Optional Goals, Tournaments, Collecting, Renewable Resources

Modulated by: Dynamic Goal Characteristics, Unknown Goals, Supporting Goals, Selectable Sets of Goals, Excluding Goals, Ephemeral Goals

Potentially conflicting with: Quick Games

High Score Lists

High Score lists give players the chance to rank themselves against other players who have previously played the game.

Example: The first arcade game to have *High Score Lists* was *Asteroids*. The player who achieves a high enough score compared to the other players of the same machine is allowed to enter his initials to be displayed in the *High Score List*.

Instantiates: Player Defined Goals, Meta Games, Replayability, Trans-Game Information, Social Statuses, Tied Results

Modulates: Game Mastery

Instantiated by:

Modulated by: Tiebreakers, Single-Player Games

Potentially conflicting with:

Higher-Level Closures as Gameplay Progresses

Closures that occur progressively become more important as the game is played.

Example: The first stones placed in *Go* are extremely important for the development of every game session but do not represent high-level closures, as their impact on the game is still uncertain. Examples of higher-level closures in *Go* are instead when groups become with absolute certainty dead through the opponents actions or become alive through gaining two eyes or connecting to another living group.

Instantiates: Varied Gameplay

Modulates:

Instantiated by: Hierarchy of Goals, Combat, Capture, Last Man Standing, Empowerment, Balancing Effects, Narrative Structures, Closure Points, Boss Monsters, Eliminate, Non-Renewable Resources, Shrinking Game World

Modulated by: Limited Set of Actions, Overcome, Right Level of Difficulty

Potentially conflicting with:

Hovering Closures

Events that are about to occur and can clearly be observed by players.

Example: Leaving an opening for specific blocks in *Tetris* usually create strong *Hovering Closures.*

Instantiates: Emotional Immersion, Anticipation, Uncommitted Alliances

Modulates: Quick Games

Instantiated by: Continuous Goals, Extended Actions, Predictable Consequences, Symmetry, Configuration, Ultra-Powerful Events, Alignment, Levels, Turn Taking, Narrative Structures, Progress Indicators, Delayed Reciprocity, The Show Must Go On, Delayed Effects, Betting

Modulated by: Time Limits

Potentially conflicting with: Surprises

Identification

The characters or parts of the game with which players identify.

Example: When playing *Europa Universalis II* or *Civilization* players do not have *Identification* with individual characters; rather they can identify with countries or cultures.

Instantiates: Emotional Immersion

Modulates: Surprises, Penalties, Tension, Social Interaction, Social Organizations, Rewards, Enemies, Consistent Reality Logic, Alternative Reality, Player Killing, Roleplaying

Instantiated by: Planned Character Development, Focus Loci, Characters, Multiplayer Games, Narrative Structures, Handles, Ownership, Creative Control

Modulated by: Persistent Game Worlds, Game State Overview

Potentially conflicting with:

Illusion of Influence

Players believe that they can influence the outcome of the game, regardless of whether this is correct.

Example: Adventure games consisting of multiple branch stories provide the players with choices of what story to read and, thereby, a feeling of affecting the story. However, this is an illusion, as all the possible stories have already been scripted.

Instantiates: Stimulated Planning, Emotional Immersion

Modulates: Multiplayer Games, Team Play, Freedom of Choice

Instantiated by: Player Balance, Planned Character Development, Improved Abilities, Game Masters, Perceived Chance to Succeed, Creative Control, Characters, Luck, Social Interaction, Tools, Right Level of Difficulty, New Abilities

Modulated by: Limited Foresight, Strategic Knowledge, Ultra-Powerful Events, Extra-Game Information, Smooth Learning Curves, Right Level of Complexity, Randomness

Potentially conflicting with: Surprises, Shared Penalties, Decreased Abilities, Narrative Structures, Ability Losses, Cut Scenes, Limited Planning Ability

Illusionary Rewards

The player receives something that is perceived as a reward but does not quantifiably help in completing a formalized goal in the game as expressed by the game state.

Example: Collecting all stars in *Super Mario Sunshine* is not required to complete the game but doing so, even after completing the goal of the game, can give players satisfaction and be used to compare one's skill and dedication to the game with other players.

Instantiates: Social Statuses, Predictable Consequences, Perceivable Margins, Exploration, Extra-Game Consequences, Experimenting, Player Defined Goals, Progress Indicators, Narrative Structures, Balancing Effects, Perceived Chance to Succeed

Modulates: Extended Actions, Rhythm-Based Actions, Combos, Game Mastery

Instantiated by: Tournaments, Helpers, Traces, Clues, Outstanding Features, Extra-Game Information

Modulated by:

Potentially conflicting with:

Immersion

Immersion in the Game World or immersion in the activity of play.

Example: Many simple puzzled-based games such as *Bejeweled* or *Minesweeper* can, even though they have very little graphics and no virtual environment compared to advanced 3D games, capture players' attention through their cognitive demands so that the players become unaware of how much time is spent playing them.

Instantiates:

Modulates: Overcome, Game Mastery

Instantiated by: Surprises, Spatial Immersion, Avatars, Cognitive Immersion, Emotional Immersion, Smooth Learning Curves, Game World, Characters, Narrative Structures, Freedom of Choice, Sensory-Motoric Immersion, Consistent Reality Logic

Modulated by:

Potentially conflicting with: Surprises, Status Indicators, Downtime, Book-Keeping Tokens, Invisible Walls, Extra-Game Information, Save-Load Cycles, Disruption of Focused Attention, Extra-Game Actions, Games within Games

Imperfect Information

One aspect of information about the total game situation is not fully known to a player, either the information known is totally wrong or the accuracy of the information is limited.

Example: Both *Zendo*, a matching game, and *Eleusis*, a card game, have rules that are decided by an umpire before gameplay begins, and winning the game consists mainly of being able to guess the rules.

Instantiates: Surprises, Indirect Information, Limited Foresight, Leaps of Faith, Exploration, Red Herrings, Unknown Goals, Experimenting, Gain Information, Conceal, Risk/Reward, Uncertainty of Information, Secret Resources

Modulates: Predictable Consequences, Near Miss Indicators, Anticipation, Trans-Game Information, Configuration, Replayability, Perceived Chance to Succeed, Narrative Structures, Memorizing, Player-Decided Distribution of Rewards & Penalties, Betting, Single-Player Games, Predefined Goals, Limited Planning Ability

Instantiated by: Combat, Cards, Book-Keeping Tokens, Dedicated Game Facilitators, Randomness, Dynamic Goal Characteristics

Modulated by: Fog of War, Tile-Laying, Clues

Potentially conflicting with: Conflict, Direct Information, Interferable Goals

Improved Abilities

Players' chance of succeeding with an action as a function within the game is increased, or the calculated effect the action has increased in the game.

Example: Chargers and power-ups in racing games often give vehicles a speed boost or raise the maximum speed possible without further affecting players' possible actions.

Instantiates: Gain Competence, Red Queen Dilemmas, Planned Character Development, Empowerment, Team Development, Rewards, Supporting Goals, Illusion of Influence, Perceived Chance to Succeed

Modulates: Competence Areas, Avatars, Decreased Abilities, Limited Resources, Consistent Reality Logic, Orthogonal Unit Differentiation, Characters, Skills, Gain Ownership

Instantiated by: Chargers, Power-Ups, Character Development, Tools

Modulated by: Time Limits, Diminishing Returns, Balancing Effects, Decreased Abilities, Freedom of Choice

Potentially conflicting with:

Inaccessible Areas

Inaccessible Areas are parts of the Game World the player can perceive but cannot currently enter, such as areas behind locked doors or sufficiently high ledges.

Example: *The Legend of Zelda* series contains many areas that are initially blocked by boulders, locked doors, or other obstacles. The player can remove these obstacles after having acquired certain items or abilities, for example, by using bombs to blow away blocking boulders and special keys to open the locked doors.

Instantiates: Traverse, Consistent Reality Logic

Modulates: Game World Navigation, Leaps of Faith, Smooth Learning Curves, Game World, Levels, Spawn Points, Spawning, Camping, Movement

Instantiated by: Movement Limitations, Invisible Walls, Obstacles

Modulated by: Deadly Traps, Safe Havens, Privileged Movement, Resource Locations, Levels, Replayability, Orthogonal Unit Differentiation

Potentially conflicting with: Freedom of Choice

Incompatible Goals

Two or more goals that cannot be fulfilled simultaneously due to having end conditions that are mutually exclusive

Example: *Tag*, where the goal of the chaser to catch the other players, the chaser's goal of tagging cannot be fulfilled at the same time as other players' goals of not being caught.

Instantiates: Conflict, Collaborative Actions, Competition, Varied Gameplay

Modulates: Attention Swapping, Planned Character Development, Selectable Sets of Goals, Narrative Structures

Instantiated by: Contact, Preventing Goals, Excluding Goals

Modulated by:

Potentially conflicting with: Mutual Goals

Indirect Control

Game elements whose actions players can affect through other game elements.

Example: Important goals in *Carolus Magnus* are having control over areas in the game. However, players cannot have control over areas directly. Rather, various factions have influence on the areas and the players compete with each other for control over the factions.

Instantiates: Continuous Goals, Resources, Gain Ownership

Modulates: Ability Losses, Traverse, Right Level of Complexity, Dexterity-Based Actions

Instantiated by: Herd, Focus Loci

Modulated by:

Potentially conflicting with: Predictable Consequences

Indirect Information

Players obtain information about the game situation in an indirect way, usually from other players.

Example: Pre-generated messages to other players in *Return to Castle Wolfenstein* are based on templates that are used to express intentions and situations in the game. As the templates are generic they fail to express the exact game state in all but the simplest situations.

Instantiates: Uncertainty of Information, Puzzle Solving, Bluffing

Modulates: Gain Information, Social Interaction, Emotional Immersion, Narrative Structures, Betrayal, Trading, Secret Alliances

Instantiated by: Clues, Helpers, Red Herrings, Communication Channels, Game Masters, Imperfect Information

Modulated by: Consistent Reality Logic, Alternative Reality

Potentially conflicting with: Direct Information, Perfect Information

Individual Penalties

The penalty for a failure to meet a requirement in the game is given only to one of the players.

Example: in *Soccer* the player committing too many mistakes or violating the rules might be taken out of the play for the rest of the game.

Instantiates: Penalties

Modulates: Team Play, Risk/Reward, Mutual Goals, Alliances

Instantiated by: Single-Player Games, Player Elimination, Downtime

Modulated by: Predictable Consequences, Shared Penalties, Player-Decided Distribution of Rewards & Penalties

Potentially conflicting with: Shared Penalties, Social Dilemmas

Individual Rewards

The reward, or parts of the reward, for reaching a goal or performing an action in the game is given to only one of the players.

Example: the items given as a reward for completing a goal in a roleplaying game are usually distributed amongst the players as *Individual Rewards*.

Instantiates: Social Dilemmas, Race, Rewards, Betrayal, Delayed Reciprocity

Modulates: Social Statuses, Conflict, Collaborative Actions, Competition, Cooperation, Team Play, Mutual Goals

Instantiated by: Single-Player Games

Modulated by: Shared Rewards

Potentially conflicting with: Shared Rewards

Interferable Goals

The game system or other players can directly influence the player's progress towards the goal.

Example: *Backgammon* has the goal of moving your pieces to your own inner table (to be able to start the larger goal of "bearing" them off the board). However, the opponent can interfere with the low-level goals of moving each individual piece to the inner table by "ousting" the vulnerable pieces. *Backgammon* without ousting is not using *Interferable Goals* even though the player can block opponent's progress as the player's actions do not have direct effect on the opponent's game state.

Instantiates: Conflict

Modulates: Alliances, Race, Symmetric Goals, Area Control, Symmetric Information

Instantiated by: Last Man Standing, Interruptible Actions, King of the Hill, Preventing Goals

Modulated by:

Potentially conflicting with: Uncertainty of Information, Imperfect Information

Interruptible Actions

Actions that can be interrupted before they affect the game state.

Example: In *RoboRally*, players choose how their robots should move by deciding a sequence of programming cards. These are the actions the robot will perform, but since other robots' movement may push the robot around, the intended actions are interruptible.

Instantiates: Attention Swapping, Interferable Goals, Risk/Reward, Balancing Effects

Modulates: Extended Actions, Trading, Storytelling, Combos, Negotiation, Irreversible Actions

Instantiated by: Turn Taking, Privileged Abilities

Modulated by: Delayed Effects

Potentially conflicting with:

Investments

Committing Resources for a certain amount of time to something in order to reap the rewards later.

Example: Developing the character's skills and attributes in roleplaying games is a direct form of *Investments*. Raising the skills and attributes is costly and there are no direct rewards or benefits from the game system point of view for doing so. These skills and attributes, however, are often useful in the long run.

Instantiates: Social Statuses, Predictable Consequences, Stimulated Planning, Resource Management, Budgeted Action Points, Rewards, Delayed Effects, Social Organizations, Committed Goals, Team Development

Modulates: Character Development, Resources, Extra-Game Consequences, Skills

Instantiated by: Extended Actions, Predictable Consequences, Self-Facilitated Games, Consumers, Units, Construction, Score, Betting, New Abilities, Privileged Abilities, Characters, Game Mastery, Creative Control, Extra-Game Actions

Modulated by: Producer-Consumer, Arithmetic Rewards for Investments, Geometric Rewards for Investments, Diminishing Returns, Paper-Rock-Scissors, Extra-Game Consequences, Risk/Reward, Ownership

Potentially conflicting with:

Invisible Walls

Invisible Walls are impassible obstacles that limit the players' movement, but not vision, to areas that appear to be part of the game world.

Example: some of the early flight simulator games used *Invisible Walls* to limit the area the player can enter. When encountering an *Invisible Wall* the plane essentially remained in the same location, even though it still seemed to fly over the terrain.

Instantiates: Memorizing, Inaccessible Areas

Modulates:

Instantiated by:

Modulated by:

Potentially conflicting with: Immersion, Consistent Reality Logic

Irreversible Actions

Actions whose effect on the game state cannot be undone.

Example: Pushing a box into a corner in *Sokoban* means that the box cannot be moved from there, as the boxes can only be pushed and not pulled.

Instantiates: Stimulated Planning, Analysis Paralysis, Narrative Structures

Modulates: Buttons, Ultra-Powerful Events, Shrinking Game World, Spawning, Levels, Transfer of Control, Puzzle Solving

Instantiated by: Extended Actions, Surprises, Leaps of Faith, Trans-Game Information, Non-Renewable Resources

Modulated by: Interruptible Actions

Potentially conflicting with: Predictable Consequences, Save-Load Cycles, Experimenting

King of the Hill

Reaching and keeping a sought for game state that other players are trying to reach and keep.

Example: The board game *Junta* lets the president control how foreign aid money is distributed to the players. This position, although dangerous, is often sought for by all players since the ownership of money is the prerequisite for winning the game.

Instantiates: Continuous Goals, Conflict, Competition, Interferable Goals, Dynamic Alliances, Balancing Effects, Role Reversal, Symmetric Goals, Tension

Modulates:

Instantiated by:

Modulated by: Damage, Time Limits, Alignment, Team Play, Lives, Gain Ownership, Guard, Score

Potentially conflicting with:

Last Man Standing

The goal of being the last survivor.

Example: The live-action game *Killer* as each player given the assignment of assassinating one other player in a circular arrangement. The completion of an assignment results in one getting the eliminated players assignment and the game continues until there is only one player left.

Instantiates: Conflict, Competition, Overcome, Collection, Survive, Symmetric Goals, Interferable Goals, Higher-Level Closures as Gameplay Progresses, Dynamic Alliances, Tournaments

Modulates:

Instantiated by: Eliminate

Modulated by: Lives, Limited Resources, Player Elimination

Potentially conflicting with:

Leaps of Faith

Making an action without any guaranteed, or visible, chance of success.

Example: the negotiation game *Intrigue* has players bribe each other to get jobs in the castles of the other players' masters. However, bribed players do not have to follow promises, and giving bribes are *Leaps of Faiths* for the briber.

Instantiates: Surprises, Irreversible Actions, Tension, Risk/Reward, Narrative Structures

Modulates:

Instantiated by: Deadly Traps, Experimenting, Imperfect Information, Delayed Reciprocity, Betrayal, Negotiation, Uncommitted Alliances

Modulated by: Movement Limitations, Obstacles, Inaccessible Areas

Potentially conflicting with: Game World Navigation, Predictable Consequences, Perceived Chance to Succeed, Save-Load Cycles, Game State Overview

Levels

A level is a part of the game in which all player actions take place until a certain goal has been reached or an end condition has been fulfilled.

Example: Each level in *Asteroids* contains a certain number of asteroids, and the player can progress to the next level after shooting all of them. The higher levels get more difficult, as the asteroids become faster and more numerous.

Instantiates: Limited Foresight, Game World, Varied Gameplay, Consistent Reality Logic, Closure Points, Hovering Closures

Modulates: Surprises, Inaccessible Areas, Narrative Structures, Varied Gameplay, Game Mastery, Smooth Learning Curves, Right Level of Difficulty

Instantiated by:

Modulated by: Save Points, Resource Generators, Irreversible Actions, Helpers, Inaccessible Areas, Spawn Points, Enemies, Clues, Obstacles, Boss Monsters, Cut Scenes

Potentially conflicting with:

Limited Foresight

Players have little knowledge of the next events in a game, or that they do not know what consequences they will have.

Example: in *Diplomacy* concrete planning beyond the next move is difficult to do as the actions of all the other players are uncertain.

Instantiates: Surprises, Limited Planning Ability, Smooth Learning Curves, Gain Information, Exploration

Modulates: Predictable Consequences, Stimulated Planning, Puzzle Solving, Narrative Structures, Illusion of Influence

Instantiated by: Randomness, Imperfect Information, Closure Points, Levels, Game Masters

Modulated by: Attention Swapping, Right Level of Complexity

Potentially conflicting with: Analysis Paralysis, Game State Overview

Limited Planning Ability

Players cannot make plans about what future actions to perform due to characteristics inherent in the game design.

Example: The planning in most gambling games is very limited with the exception for long-term strategies regarding money.

Instantiates: Spatial Immersion

Modulates: Multiplayer Games, Single-Player Games, Surprises, Right Level of Difficulty

Instantiated by: Limited Foresight, Time Limits, Player Decided Results, Preventing Goals, Secret Resources, Uncertainty of Information, Randomness, The Show Must Go On, Right Level of Difficulty, Right Level of Complexity

Modulated by: Limited Set of Actions, Real-Time Games, Imperfect Information

Potentially conflicting with: Predictable Consequences, Downtime, Illusion of Influence, Freedom of Choice, Analysis Paralysis, Puzzle Solving, Cognitive Immersion

Limited Resources

The resources available to the players are limited to such extent that they are forced to plan ahead the use of the resources, that is, there is a perceivable possibility of running out of the resources during the game play.

Example: even though it is possible to build more troops in *WarCraft* the game is balanced in such way that there is always a need for planning the use of the troops and also a feeling of the possibility of running out of them.

Instantiates: Resource Management, Game Mastery, Risk/Reward, Decreased Abilities

Modulates: Pick-Ups, Stimulated Planning, Resource Generators, Last Man Standing, Resources, Downtime, Tradeoffs, Turn Taking, Freedom of Choice

Instantiated by: Time Limits, Budgeted Action Points, Non-Renewable Resources, Container

Modulated by: Decreased Abilities, Improved Abilities, Renewable Resources

Potentially conflicting with: Analysis Paralysis

Limited Set of Actions

Players can only have a few actions to choose from.

Example: Players in real-time strategy games typically have very *Limited Sets of Actions* for each *Unit*, and if the number of *Units* decreases, they have few actions overall to choose from.

Instantiates: Stimulated Planning, Penalties, Analysis Paralysis, Tension

Modulates: Limited Planning Ability, Gain Competence, Units, Higher-Level Closures as Gameplay Progresses

Instantiated by: Narrative Structures, Ability Losses

Modulated by:

Potentially conflicting with: Freedom of Choice, Memorizing, Game Masters

Lives

Lives can be defined as the number of chances a player has within a game session before it is terminated.

Example: In *Asteroids*, the player initially has three *Lives*, and they are lost either when the *Avatar* is shot by the UFO or collides with an asteroid. When all *Lives* have been lost, it is the end of the game session.

Instantiates: Continuous Goals, Emotional Immersion, Resources, Tension, Player Killing, Spawning

Modulates: Conflict, Combat, Last Man Standing, Evade, Survive, King of the Hill, New Abilities, Characters, Player Elimination

Instantiated by: Parallel Lives

Modulated by: Damage, Deadly Traps, Penalties, Renewable Resources, Spawn Points

Potentially conflicting with: Consistent Reality Logic

Luck

The feeling that random effects are not random but favorable to the player.

Example: The high level of *Luck* in gambling games lets most people start playing the games easily and feel that they are competent players, even though *Game Mastery* might be very difficult to achieve.

Instantiates: Smooth Learning Curves, Illusion of Influence, Risk/Reward, Tension

Modulates: Near Miss Indicators, Overcome, Polyathlons, Game Mastery

Instantiated by: Dice, Randomness, Skills, Betting

Modulated by: Game Masters, Delayed Effects

Potentially conflicting with: Predictable Consequences, Game Mastery, Bluffing, Strategic Knowledge, Meta Games

Maneuvering

Controlling the movement of game elements in real-time games.

Example: The racing game *F-Zero GX* requires player to maneuver to avoid obstacles and other vehicles while traveling at high speeds on a 3D racing track.

Instantiates: Attention Swapping, Spatial Immersion, Movement, Dexterity-Based Actions

Modulates: Capture, Race

Instantiated by: Real-Time Games, Collecting, Aim & Shoot, The Show Must Go On

Modulated by: Deadly Traps, Pick-Ups, Chargers, First-Person Views, Third-Person Views, Enemies, Obstacles, Right Level of Difficulty, Ultra-Powerful Events

Potentially conflicting with: Turn-Based Games

Memorizing

Games where players gain benefit by remembering facts about the game or game state.

Example: The games in the *Simon* toy by Mattel show patterns to players by playing sounds and showing lights. The players' goals are to repeat the patterns, which makes *Memorizing* the primary game skill.

Instantiates: Cognitive Immersion, Empowerment, Game Mastery

Modulates: Overcome, Polyathlons

Instantiated by: Deadly Traps, Reconfigurable Game World, Discard Piles, Strategic Knowledge, Fog of War, Self-Facilitated Games, Gain Information, Invisible Walls, Delayed Effects, Randomness, Extra-Game Information, Puzzle Solving, Strategic Locations

Modulated by: Exploration, Perfect Information, Imperfect Information

Potentially conflicting with: Limited Set of Actions, Book-Keeping Tokens, Replayability, Progress Indicators

Meta Games

A game based on the effects and outcomes of other games.

Example: Betting on the outcome of games is a classic form of *Meta Game*. In these *Meta Games*, the skill required by players ranges from having the actual actions used in the games to having knowledge about the current condition and tactics of the participants in the game being bet upon.

Instantiates: Strategic Knowledge, Perceivable Margins, Trans-Game Information

Modulates: Multiplayer Games, Risk/Reward, Single-Player Games, Spectators

Instantiated by: High Score Lists, Optional Goals, Tournaments, Score, Betting, Paper-Rock-Scissors, Handicaps, Extra-Game Actions, Extra-Game Consequences, Games within Games, Team Development

Modulated by: Quick Games, Ownership, Multiplayer Games

Potentially conflicting with: Luck

Moveable Tiles

These are Tiles that can move during gameplay either as the effect of player actions or game events.

Example: One of the levels in *Super Monkey Ball* consists almost exclusively of moving tiles, where each tile contains bananas for bonus scores. The tiles move in a very predictable pattern by first contracting to the center of the level and then again spreading out.

Instantiates: Strategic Knowledge, Rhythm-Based Actions, The Show Must Go On, Timing

Modulates: Tiles, Aim & Shoot, Reconfigurable Game World

Instantiated by:

Modulated by: Controllers

Potentially conflicting with:

Movement

The action of moving game elements in the Game World.

Example: *Spacewar* and *Asteroids* both allow players to move spaceships by rotation and thrust in the spaceships' direction. However, they also allow players to escape dangerous situations by providing a limited number of hyperjumps that place the spaceship in a random location.

Instantiates: Game World Navigation, Spatial Immersion, Budgeted Action Points, Puzzle Solving, Ultra-Powerful Events, Orthogonal Unit Differentiation, Progress Indicators, Dexterity-Based Actions

Modulates: Aim & Shoot, Game World

Instantiated by: Aim & Shoot, Delivery, Herd, Exploration, Capture, Race, Traverse, Stealth, Collecting, Evade, Maneuvering

Modulated by: Deadly Traps, Movement Limitations, Inaccessible Areas, Privileged Movement, Obstacles

Potentially conflicting with:

Movement Limitations

The movement of game elements is limited in some way.

Example: many racing games make the leading vehicle have a little lower maximum speed than the others vehicles in order to increase the chance of the other vehicles catching up.

Instantiates: Penalties, Inaccessible Areas, Risk/Reward, Downtime, Balancing Effects, Outstanding Features, Tension, Ability Losses

Modulates: Game World Navigation, Leaps of Faith, Movement, Evade, Race

Instantiated by: Deadly Traps, Obstacles, Budgeted Action Points, Shrinking Game World, Area Control

Modulated by:

Potentially conflicting with: Freedom of Choice

Mule

A Mule is a player character that is set, typically by using scripts, to perform long, monotonous and specialized sets of actions.

Example: the player can set the villagers in *Age of Empires* to gather resources until the resources run out or the player gives them different tasks.

Instantiates: Avatars

Modulates: Resource Generators

Instantiated by:

Modulated by: Diminishing Returns, Risk/Reward

Potentially conflicting with:

Multiplayer Games

Games that have more than one player.

Example: MMORPGs can have thousands of players playing the same game instance simultaneously and tens or even hundreds of thousands of players participating in the game instance asynchronously.

Instantiates: Downtime, Synchronous Games, Identification

Modulates: Social Organizations, Game Mastery, Meta Games, Social Interaction

Instantiated by: Tournaments, Persistent Game Worlds

Modulated by: Early Elimination, Meta Games, Competence Areas, Self-Facilitated Games, Ghosts, Downtime, Dedicated Game Facilitators, Illusion of Influence, Skills, Game Masters, Creative Control, Freedom of Choice, Tiebreakers, Tied Results, Balancing Effects, Limited Planning Ability, Right Level of Difficulty, Smooth Learning Curves, Team Play, Player Elimination, Asymmetric Resource Distribution, Player Balance, Handicaps, Agents, Characters, Extra-Game Actions

Potentially conflicting with: Save-Load Cycles

Mutual Goals

The players, or some of the players, try to reach a goal within the game together.

Example: Hunting in teams in Massively Multiplayer Online Roleplaying Games consists of a series of *Mutual Goals* of killing monsters. The hunting teams usually contain players with different skill and attribute sets: the strong fighters engage the monsters in direct combat to keep the healers and wizards safe from the attacking monsters. The healers, obviously, heal the injured characters during the fight and the wizards cast long range attack spells on the monsters. The *Mutual Goal* in this case is clear: kill the attacking monster or monsters together.

Instantiates: Betrayal, Team Play, Symmetric Goals, Cooperation, Alliances, Delayed Reciprocity, Shared Rewards

Modulates: Shared Resources, Penalties, Competition, Rewards, Player-Decided Distribution of Rewards & Penalties, Team Elimination

Instantiated by: Shared Penalties, Shared Rewards, Ownership

Modulated by: Individual Penalties, Player Defined Goals, Secret Alliances, Individual Rewards, Asymmetric Resource Distribution, Negotiation, Shared Penalties

Potentially conflicting with: Conflict, Incompatible Goals

Narrative Structures

The structures of the stories that are unfolded by playing the game.

Example: The *Final Fantasy* series has a complex story with personal relations as an important ingredient, and playing the game may be as much for experiencing the story as the gameplay challenges it offers.

Instantiates: Surprises, Limited Set of Actions, Emotional Immersion, Anticipation, Identification, Immersion, Extra-Game Consequences, Tension, Higher-Level Closures as Gameplay Progresses, Right Level of Complexity, Hovering Closures

Modulates: Achilles' Heels, Unknown Goals, Persistent Game Worlds, Alternative Reality, Single-Player Games, Consistent Reality Logic, Right Level of Difficulty

Instantiated by: Hierarchy of Goals, Leaps of Faith, Irreversible Actions, Illusionary Rewards, Ultra-Powerful Events, Dedicated Game Facilitators, Game Masters, Characters, Storytelling, Cut Scenes

Modulated by: Delivery, Indirect Information, Limited Foresight, Character Development, Trans-Game Information, Red Herrings, Ephemeral Goals, Never Ending Stories, Planned Character Development, Traverse, Privileged Movement, Incompatible Goals, Role Reversal, Goal Indicators, Creative Control, Rewards, Enemies, Levels, Ability Losses, Dynamic Goal Characteristics, Imperfect Information, Player Constructed Worlds, Randomness, Rescue, Collection, Clues, Closure Points, New Abilities, Spawning, Betrayal, Empowerment, Varied Gameplay, Reversability, Roleplaying, Game State Overview

Potentially conflicting with: Penalties, Ephemeral Goals, Illusion of Influence, Replayability, Perceived Chance to Succeed, Ability Losses, Planned Character Development, Self-Facilitated Games, Player Defined Goals, Freedom of Choice

Near Miss Indicators

Players have explicit information about how close they were to achieving a goal when they have failed to achieve it

Example: sounds and visual effects of explosions and bullet shots near players' avatars in first-person shooters indicate that someone just has missed, and more importantly that someone knows where the players are and wants to shoot them.

Instantiates:

Modulates: Stimulated Planning, Replayability, Perceived Chance to Succeed, Outcome Indicators, Tension, Anticipation

Instantiated by: Progress Indicators

Modulated by: Luck, Save-Load Cycles, Game State Overview, Imperfect Information

Potentially conflicting with:

Negotiation

A situation where the players confer with each other in order to reach an agreement or settlement.

Example: The *Trading* phase of *Settlers of Catan* allows the player whose turn it is to start *Negotiations* with other players about the trade. This *Negotiation* phase can contain offers and counter offers from all the other players as well, but only with the player initiating the trade. Each *Negotiation* ends when the players have resolved the trade, and the *Negotiation* phase itself ends when the initiating player declares that it has ended.

Instantiates: Leaps of Faith, Player Balance, Transfer of Control, Game Mastery, Extra-Game Actions, Bluffing

Modulates: Bidding, Collaborative Actions, Committed Goals, Trading, Overcome, Handicaps, Dynamic Alliances, Polyathlons, Ability Losses, Mutual Goals, Social Organizations, Player Decided Results, Uncommitted Alliances, Shared Rewards, Player Defined Goals

Instantiated by: Shared Resources, Self-Facilitated Games, Asymmetric Abilities, Game Masters, Player-Decided Distribution of Rewards & Penalties

Modulated by: Safe Havens, Interruptible Actions, Betrayal, Asymmetric Information, Turn Taking, Game State Overview, Preventing Goals, Symmetric Information

Potentially conflicting with: Downtime, Tiebreakers

Never Ending Stories

Stories in games which have no predefined ends.

Example: MUDs and MMORPGs have world stories that continuously develop as long as the server providing the game is running and players or game facilitators affect the game state.

Instantiates: Surprises

Modulates: Narrative Structures, Game World, Persistent Game Worlds

Instantiated by: Player Constructed Worlds, Storytelling

Modulated by: Trans-Game Information, Dedicated Game Facilitators, Creative Control, Randomness

Potentially conflicting with: Closure Points

New Abilities

Gaining new abilities during gameplay.

Example: Becoming a zombie in *Zombiepox* does not automatically mean game over, since players can cure their *Avatars* by finding brains. However, the players' *Avatars* have the ability to spread the zombie disease just like other zombies, which does not aid in player success.

Instantiates: Gain Competence, Competence Areas, Character Development, Red Queen Dilemmas, Planned Character Development, Empowerment, Investments, Team Development, Supporting Goals, Rewards, Freedom of Choice, Perceived Chance to Succeed, Privileged Abilities, Varied Gameplay, Orthogonal Unit Differentiation, Illusion of Influence

Modulates: Units, Smooth Learning Curves, Team Play, Characters, Ability Losses, Risk/Reward, Gain Ownership, Narrative Structures, Focus Loci

Instantiated by: Chargers, Transfer of Control, Role Reversal, Power-Ups, Tools

Modulated by: Time Limits, Budgeted Action Points, Lives, Freedom of Choice, Ability Losses, Alternative Reality

Potentially conflicting with: Player Balance, Consistent Reality Logic

No-Ops

The action of doing nothing.

Example: powering down in the board game *RoboRally* to repair damage requires that a player is prepared to spend one turn doing a *No-Op*.

Instantiates: Penalties, Tension, Freedom of Choice, Extended Actions, Privileged Abilities

Modulates: Stealth, Turn-Based Games, Camping, Timing

Instantiated by: Tick-Based Games, Real-Time Games

Modulated by: The Show Must Go On

Potentially conflicting with: Varied Gameplay

Non-Renewable Resources

The amount of resources available in the game is determined at the start of the game and these resources cannot be renewed once they are exhausted.

Example: the amount of wood, food, and other basic resources in *Age of Empires* is determined at the start and is not renewed during the game. The players can, and often do, exhaust these stockpiles forcing the players to seek out new resource stockpiles during the game.

Instantiates: Closed Economies, Irreversible Actions, Decreased Abilities, Limited Resources, Tied Results, Higher-Level Closures as Gameplay Progresses

Modulates: Units, Player Balance, Resources, Transfer of Control, Handicaps, Puzzle Solving, Varied Gameplay, Randomness

Instantiated by: Cards

Modulated by: Transfer of Control, Ownership

Potentially conflicting with: Experimenting, Renewable Resources

Obstacles

Obstacles are game elements that hinder the players from taking the shortest route between two places.

Example: The typical *Obstacles* in adventure games are locked doors, which can only be opened with a correct key, for example, the locked doors of *The Legend of Zelda: Wind Waker* require keys.

Instantiates: Movement Limitations, Outstanding Features, Timing, Dexterity-Based Actions, Inaccessible Areas

Modulates: Game World Navigation, Leaps of Faith, Exploration, Rescue, Game World, Traverse, Movement, Levels, Maneuvering, Right Level of Difficulty

Instantiated by:

Modulated by: Privileged Movement, Privileged Abilities

Potentially conflicting with: Aim & Shoot

Optional Goals

There are goals the player does not necessarily have to reach during the game

Example: The game *Day of the Tentacle* contains the whole predecessor, *Maniac Mansion*, as part of a game console that is within the game. The whole inner game could be finished without providing any advantage to the outer game.

Instantiates: Hierarchy of Goals, Meta Games, Selectable Sets of Goals, Supporting Goals, Freedom of Choice, Replayability

Modulates: Ephemeral Goals

Instantiated by: Player Defined Goals, Easter Eggs, Games within Games

Modulated by: Trading

Potentially conflicting with:

Orthogonal Unit Differentiation

When Units in a game can be described by actions, abilities, and characteristics that are orthogonal to each other regarding functionality.

Example: the pieces in *Chess* have different types of movement rules, giving them different gameplay value and giving the game *Orthogonal Unit Differentiation*.

Instantiates: Competence Areas, Surprises, Stimulated Planning, Varied Gameplay

Modulates: Fog of War, Overcome, Enemies, Team Play, Social Organizations, Team Balance, Symmetry, Inaccessible Areas

Instantiated by: Damage, Asymmetric Abilities, Units, Privileged Movement, Movement, Characters, New Abilities, Privileged Abilities, Combos

Modulated by: Decreased Abilities, Improved Abilities, Skills

Potentially conflicting with: Symmetry

Outcome Indicators

Players are given information about an outcome of an action in addition to the effect of the action.

Example: fighting games such as *Soul Calibur* shows blood after successful attacks and sparks after successful blocks. These are not effects of the action since they do not represent the game state, which is done by the avatars positions, stances, and health bars, but rather indicators that the player has succeeded in an action.

Instantiates: Predictable Consequences

Modulates: Rewards, Public Information

Instantiated by:

Modulated by: Direct Information, Near Miss Indicators, Perfect Information, Game State Overview, Uncertainty of Information

Potentially conflicting with: Uncertainty of Information

Outstanding Features

Outstanding Features are parts of the Game World that cannot be manipulated but by their shape, color, or texture convey information to players.

Example: The rivers in *Civilization* indicate that cities that are located near them have better production rates.

Instantiates: Status Indicators, Illusionary Rewards

Modulates: Deadly Traps, Game World Navigation, Exploration, Resource Generators, Chargers, Game World, Resource Locations, Strategic Locations, Alarms

Instantiated by: Symmetry, Movement Limitations, Clues, Traces, Obstacles

Modulated by:

Potentially conflicting with: Surprises

Overcome

This is the goal of the player to defeat an opposing force in a test, or a series of tests, involving attributes or performance of low-level actions.

Example: *Chess* uses the *Overcome* pattern through a combination of eliminating the other player's pieces and skillful positioning of one's own pieces.

Instantiates: Conflict, Competition, Gain Ownership, Capture, Tension, Game Mastery, Excluding Goals, Symmetric Goals, Tournaments, Transfer of Control

Modulates: Delivery, Rescue, Higher-Level Closures as Gameplay Progresses, Player Elimination

Instantiated by: Last Man Standing, Tournaments, Enemies, Boss Monsters, Area Control

Modulated by: Achilles' Heels, Timing, Rhythm-Based Actions, Dexterity-Based Actions, Negotiation, Puzzle Solving, Luck, Orthogonal Unit Differentiation, Tiebreakers, Memorizing, Immersion

Potentially conflicting with:

Ownership

Ownership dictates which of the players have access to the Resources and other game components and how.

Example: *Settlers of Catan* incorporates several layers of *Ownership*. The most basic one is the *Ownership* of basic *Resources*, which are used to build roads, settlements, and cities, and to buy special development cards. The player, naturally, has *Ownership* of these elements as well. The player building the longest continuous road claims the *Ownership* of the longest road card and the player having most armies claims the *Ownership* of the largest army card. The *Ownership* of these cards is used to calculate victory points.

Instantiates: Emotional Immersion, Identification, Rewards, Privileged Abilities, Tension, Mutual Goals, Betting

Modulates: Meta Games, Conflict, Capture, Resource Management, Units, Rescue, Resources, Strategic Locations, Renewable Resources, Persistent Game Worlds, Collection, Investments, Guard, Non-Renewable Resources

Instantiated by: Avatars, Transfer of Control, Card Hands, Creative Control, Area Control

Modulated by: Shared Resources, Trading, Producers, Shared Rewards, Gain Ownership, Asymmetric Resource Distribution, Symmetric Resource Distribution, Tools, Player Killing

Potentially conflicting with:

Paper-Rock-Scissors

Sets of three or more actions form cycles where every action has an advantage over another action.

Example: The relations between monsters and weapons in *Quake* form a *Paper-Rock-Scissors* relationship, so no weapon was best against all monsters, and players had to switch between weapons to make maximum use of the weapons.

Instantiates: Meta Games, Symmetry, Player Balance, Game Mastery, Tension, Randomness

Modulates: Investments, Asymmetric Goals, Asymmetric Abilities

Instantiated by: Character Development, Asymmetric Abilities, Units

Modulated by: Public Information

Potentially conflicting with: Predictable Consequences

Parallel Lives

Parallel Lives are used in games where the player controls or protects several game elements which each can be considered to have a life of its own.

Example: *Missile Command* is an archetypical example of *Parallel Lives*: the player has six cities that all can be destroyed and the player can continue playing as long as at least one city is intact.

Instantiates: Attention Swapping, Lives

Modulates: Units, Player Elimination

Instantiated by:

Modulated by: Penalties

Potentially conflicting with: Avatars

Penalties

Players are inflicted with something perceived as negative or stripped of an advantage, due to failure to meet a requirement in the game.

Example: The *Penalty* for losing a piece to an opponent in *Chess* is the loss of that game piece for the remainder of the game.

Instantiates: Social Statuses, Predictable Consequences, Strategic Knowledge, Tension, Dynamic Alliances, Spawning, Emotional Immersion

Modulates: Attention Swapping, Damage, Deadly Traps, Game Mastery, Rewards, Lives, Parallel Lives, Units, Ephemeral Goals, Team Play, Area Control, Skills, Risk/Reward, Combos, Characters, Betrayal, Player Killing, Uncommitted Alliances, Player Defined Goals

Instantiated by: Spectators, Individual Penalties, Limited Set of Actions, Ability Losses, Decreased Abilities, No-Ops, Privileged Abilities, Committed Goals, Eliminate, Role Reversal, Movement Limitations, Shared Penalties, Resources, Downtime

Modulated by: Continuous Goals, Shared Resources, Consistent Reality Logic, Rewards, Privileged Abilities, Player-Decided Distribution of Rewards & Penalties, Identification, Balancing Effects, Mutual Goals, Extra-Game Consequences

Potentially conflicting with: Narrative Structures, Freedom of Choice, Save-Load Cycles

Perceivable Margins

That players can notice a perceivable difference between how well actions are performed in the game, or a noticeable difference between the game state before and after the actions are performed.

Example: taking photographs and disarming explosives in *America's Army* requires players to do a continuous action for several seconds. The completion of these actions shows with clearly *Perceivable Margins* that the team that did the action controlled a part of the game area for a significant amount of time.

Instantiates: Predictable Consequences, Game Mastery, Tiebreakers

Modulates:

Instantiated by: Meta Games, Direct Information, Combat, Extended Actions, Dynamic Goal Characteristics, Collaborative Actions, Tournaments, Illusionary Rewards

Modulated by: Game State Overview

Potentially conflicting with: Balancing Effects, Tension, Randomness, Tied Results

Perceived Chance to Succeed

Players believe, whether correctly or not, that they have a chance to succeed with actions in a game.

Example: Most computer games can either not be won at all or guarantee that there are ways to win. In the latter case, players know that there exists a chance to succeed in completing the game, but the perception of that possibility for them is mainly due to their perception of their own skills compared to the difficulty of the game.

Instantiates: Emotional Immersion, Illusion of Influence, Tension

Modulates:

Instantiated by: Predictable Consequences, Character Development, Player Balance, Team Balance, Handicaps, Improved Abilities, Freedom of Choice, Game Masters, New Abilities, Player Decided Results, Balancing Effects, Right Level of Difficulty, Tools, Progress Indicators, Illusionary Rewards

Modulated by: Near Miss Indicators, Smooth Learning Curves, Social Dilemmas, Decreased Abilities, Enemies, Tradeoffs, Risk/Reward, Skills, Randomness, Imperfect Information, Cut Scenes, Asymmetric Resource Distribution

Potentially conflicting with: Leaps of Faith, Decreased Abilities, Ultra-Powerful Events, Perfect Information, Ability Losses, Game Masters, Surprises, Narrative Structures

Perfect Information

The player has full and reliable access to current or past information about a game component, or that total current or past game state is known to the player

Example: Programming games such as *JRobots*, *CRobots*, and *PRobots* (where J, C, and P stand for the Java, C, and Pascal programming languages, respectively) let the players code their own robots that then fight the other robots in a simulation, which the players cannot affect. Unless specified, the code controlling the other robots is available to the players after the game instances, letting them have *Perfect Information* about the other players' strategies for future games if the player can interpret the strategies from the code.

Instantiates: Direct Information, Predictable Consequences, Stimulated Planning, Symmetric Information, Preventing Goals

Modulates: Strategic Knowledge, Gain Information, Memorizing, Symmetric Information, Asymmetric Information, Analysis Paralysis, Public Information, Game State Overview, Right Level of Complexity, Outcome Indicators, Predefined Goals

Instantiated by:

Modulated by:

Potentially conflicting with: Indirect Information, Red Herrings, Uncertainty of Information, Asymmetric Information, Gain Information, Randomness, Tension, Perceived Chance to Succeed

Persistent Game Worlds

The storage of the game state of a single game instance in Persistent Game Worlds is independent from the players' game and play sessions.

Example: the game worlds in tabletop roleplaying games can survive changes in the player composition, even when the game master has been changed.

Instantiates: Emotional Immersion, Multiplayer Games, Extra-Game Consequences, Extra-Game Actions, Social Interaction

Modulates: Social Statuses, Identification, Characters, Player Constructed Worlds, Social Organizations

Instantiated by: Dedicated Game Facilitators, Game Masters

Modulated by: Avatars, Character Development, Construction, Never Ending Stories, Narrative Structures, Creative Control, Storytelling, Asynchronous Games, Handles, Ownership, Roleplaying

Potentially conflicting with: Reversability

Pick-Ups

Pick-Ups are game elements that exist in the game world and can be collected by players, usually by moving an avatar or Units in contact with the Pick-Up.

Example: the ammunition packs in *Quake 3* are *Pick-Ups* that replenish the players' ammunition.

Instantiates: Resource Locations, Strategic Locations, Collecting, Supporting Goals

Modulates: Score, Collection, Renewable Resources, Maneuvering, Gain Ownership

Instantiated by: Delivery

Modulated by: Renewable Resources, Limited Resources, Traces, Balancing Effects

Potentially conflicting with:

Planned Character Development

When Character Development is under players' control and can be planned.

Example: Most tabletop roleplaying games allow players to make an initial choice of how their characters should develop by choosing classes and professions. If the game system allows special abilities to become available after certain prerequisites have been met, players can plan which of these to select and set personal goals for the character.

Instantiates: Gain Competence, Continuous Goals, Competence Areas, Stimulated Planning, Anticipation, Illusion of Influence, Team Development, Player Constructed Worlds, Identification, Freedom of Choice, Creative Control, Player Defined Goals

Modulates: Character Development, Characters, Narrative Structures, Team Play, Privileged Abilities

Instantiated by: New Abilities, Improved Abilities, Skills, Rewards

Modulated by: Unknown Goals, Incompatible Goals, Game Masters, Predefined Goals, Dynamic Goal Characteristics, Extra-Game Actions, Privileged Abilities

Potentially conflicting with: Narrative Structures

Player Balance

Players have equal chances of succeeding with actions in a game or winning a game.

Example: fighting games can allow players to modify their health by a percentage to give different players different health values and thereby counter imbalances in the skill of damaging the opponent.

Instantiates: Illusion of Influence, Perceived Chance to Succeed, Team Balance

Modulates: Multiplayer Games, Player Defined Goals, Competition, Game Mastery

Instantiated by: Symmetry, Player Decided Results, Paper-Rock-Scissors, Handicaps, Balancing Effects, Randomness, Diminishing Returns, Negotiation

Modulated by: Tournaments, Red Queen Dilemmas, Supporting Goals, Symmetric Resource Distribution, Reconfigurable Game World, Decreased Abilities, Ability Losses, Spawning, Characters, Right Level of Difficulty, Role Reversal, Game World, Strategic Locations, Resources, Non-Renewable Resources

Potentially conflicting with: Asymmetric Abilities, Ephemeral Goals, Red Queen Dilemmas, Asymmetric Goals, Power-Ups, Privileged Movement, Camping, New Abilities, Empowerment, Privileged Abilities, Character Development, Asymmetric Resource Distribution, Geometric Rewards for Investments

Player Constructed Worlds

Game Worlds that are created by players.

Example: MUDs are often completely *Player Constructed Worlds* as not only do players create stories about the world but also the places and game elements in the games, and even the people maintaining the servers running the game are often players.

Instantiates: Player Decided Results, Emotional Immersion, Never Ending Stories, Empowerment

Modulates: Game World, Narrative Structures, Roleplaying

Instantiated by: Planned Character Development, Construction, Game Masters, Storytelling, Tile-Laying

Modulated by: Self-Facilitated Games, Constructive Play, Persistent Game Worlds, Creative Control, Strategic Locations, Social Interaction

Potentially conflicting with:

Player Decided Results

Players, or at least some of the players, are responsible for deciding at least some of the results of the player actions. These decisions are not necessarily based on the rules of the game.

Example: Other players can vote to kick off and even ban players who behave badly in many online first-person shooters.

Instantiates: Delayed Reciprocity, Social Organizations, Balancing Effects, Limited Planning Ability, Empowerment, Player Balance, Betrayal, Secret Alliances, Perceived Chance to Succeed

Modulates: Alliances, Social Interaction

Instantiated by: Collaborative Actions, Player-Decided Distribution of Rewards & Penalties, Game Masters, Self-Facilitated Games, Storytelling, Player Constructed Worlds

Modulated by: Social Statuses, Negotiation

Potentially conflicting with: Predictable Consequences, Team Balance

Player Defined Goals

Goals and subgoals that players can create or customize within the game itself.

Example: *SimCity* and most of the other *Sim* -games are good examples of games where *Player Defined Goals* are possible and also integral to the resulting gameplay. The gameplay is open as there are no winning conditions provided by the game itself and the game system is complex enough to allow huge amounts of different outcomes. The player is free to choose and pursue as a goal almost any possible game state from building the biggest city to making a strong police state to having fun in bulldozing the suburban areas when they are flourishing.

Instantiates: Emotional Immersion, Anticipation, Optional Goals, Creative Control, Freedom of Choice, Preventing Goals, Extra-Game Consequences, Tension

Modulates: Rewards, Mutual Goals

Instantiated by: High Score Lists, Bidding, Character Development, Ephemeral Goals, Construction, Illusionary Rewards, Characters, Betting, Easter Eggs, Collecting, Planned Character Development

Modulated by: Player Balance, Rewards, Penalties, Game State Overview, Negotiation

Potentially conflicting with: Goal Indicators, Narrative Structures

Player Elimination

In games with Player Elimination, the players' game sessions can be finished without the players consent, often as a penalty for failing to achieve something.

Example: In *Magic: The Gathering*, the players whose health level drops below zero are removed completely from play, thus ending their game sessions. Here, the end condition is that the health level is below zero and the evaluation function terminates that player's game session.

Instantiates: Early Elimination, Conflict, Individual Penalties, Downtime, Team Elimination, Tension

Modulates: Last Man Standing, Shared Penalties, Multiplayer Games, Survive

Instantiated by: Combat, Bidding, Closed Economies, Ability Losses, Eliminate

Modulated by: Spectators, Overcome, Lives, Parallel Lives, Score, Player Killing

Potentially conflicting with:

Player Killing

Allows players to intentionally or unintentionally remove players from the game for at least some time.

Example: Deathmatch first-person shooters, such as *Quake III*, have *Player Killing* as one of the main goals for the game. The more other players the player manages to take out, the more points or frags he is rewarded. The players who are killed usually lose their gained special items and abilities and are transferred back to a spawn point.

Instantiates: Downtime, Team Elimination

Modulates: Team Play, Player Elimination, Tension, Team Balance, Ownership

Instantiated by: Lives

Modulated by: Social Statuses, Avatars, Penalties, Decreased Abilities, Identification, Rewards, Ability Losses, Risk/Reward, Spawning

Potentially conflicting with:

Player-Decided Distribution of Rewards & Penalties

That one or more player controls the process of distributing between several players the rewards for completing, or the penalties for failing, a goal.

Example: in *Drachengold* players find treasures but do only get to keep them if they can agree on how they should be distributed between the players within a limit amount of time.

Instantiates: Player Decided Results, Resource Management, Dynamic Alliances, Balancing Effects, Betrayal, Tradeoffs, Freedom of Choice, Secret Alliances, Risk/Reward, Uncommitted Alliances, Tension, Symmetric Resource Distribution, Asymmetric Resource Distribution, Negotiation

Modulates: Individual Penalties, Penalties, Shared Penalties, Tied Results, Rewards, Shared Rewards

Instantiated by: Collaborative Actions, Tied Results, Team Play

Modulated by: Committed Goals, Mutual Goals, Imperfect Information, Resources, Privileged Abilities

Potentially conflicting with: Predictable Consequences

Polyathlons

Polyathlons are tournaments that consist of several different types of games.

Example: *WarioWare, Inc.* consists of many *Mini Games*, which are played sequentially to progress in the main game.

Instantiates: Competence Areas, Varied Gameplay

Modulates:

Instantiated by:

Modulated by: Quick Games, Memorizing, Dexterity-Based Actions, Luck, Negotiation

Potentially conflicting with:

Power-Ups

Power-Ups are game elements that give time-limited advantages to the player that picks them up.

Example: Quad damage *Power-Up* in *Quake* quadruples the damage caused by the player's weapons for a limited amount of time.

Instantiates: Gain Competence, Time Limits, Strategic Knowledge, Ephemeral Goals, Improved Abilities, New Abilities, Strategic Locations, Privileged Abilities, Collecting

Modulates: Skills

Instantiated by:

Modulated by: Producers, Trading

Potentially conflicting with: Player Balance

Predefined Goals

Predefined Goals are preset by the game designer, usually arranged in a rigid hierarchy, which can only be adaptable by players' choices or interpretations if the design allows it.

Example: *Monopoly* has the *Predefined Goal* of eliminating all other players by driving them into bankruptcy.

Instantiates: Hierarchy of Goals, Strategic Knowledge, Selectable Sets of Goals, Game Mastery, Analysis Paralysis

Modulates: Planned Character Development

Instantiated by:

Modulated by: Perfect Information, Imperfect Information, Asymmetric Information, Symmetric Information

Potentially conflicting with: Ephemeral Goals, Unknown Goals

Predictable Consequences

Players can predict how the game state will change if they perform actions, or possibly sequences of actions.

Example: The actions in *Chess* and *Go* have totally *Predictable Consequences*, and skillful playing of these games consists on being able to predict opponents' actions and planning many actions ahead.

Instantiates: Perceived Chance to Succeed, Anticipation, Hovering Closures, Stimulated Planning, Uncommitted Alliances, Investments, Experimenting, Cognitive Immersion

Modulates: Surprises, Analysis Paralysis, Individual Penalties, Betting, Strategic Knowledge

Instantiated by: Damage, Alternative Reality, Illusionary Rewards, Ultra-Powerful Events, Penalties, Arithmetic Rewards for Investments, Outcome Indicators, Perfect Information, Investments, Perceivable Margins, Consistent Reality Logic

Modulated by: Skills, Limited Foresight, Right Level of Complexity, Closure Points, Uncertainty of Information, Imperfect Information, Randomness

Potentially conflicting with: Producer-Consumer, Irreversible Actions, Indirect Control, Player-Decided Distribution of Rewards & Penalties, Player Decided Results, Surprises, Luck, Risk/Reward, Paper-Rock-Scissors, Limited Planning Ability, Selectable Sets of Goals, Leaps of Faith

Preventing Goals

Goals where the objective is to prevent a completion of another goal.

Example: The goal in *Backgammon* is to move each individual piece to the inner table and one can prevent the other player from achieving this in two ways: by hitting the opponent's piece when moving one's own pieces or by blocking the piece by placing two or more pieces on area of the game board. The first case directly affects the opponent's piece as it interferes with the game state (the position of the piece) defining the opponent's goal. The second case indirectly prevents the goal as it does not affect the piece but may block future moves of the piece.

Instantiates: Continuous Goals, Conflict, Interferable Goals, Incompatible Goals, Asymmetric Goals, Excluding Goals, Limited Planning Ability

Modulates: Negotiation

Instantiated by: Herd, Rescue, Construction, Perfect Information, Enemies, Player Defined Goals, Capture, Evade, Conceal, Guard, Survive, Eliminate

Modulated by: Time Limits, Game State Overview

Potentially conflicting with:

Privileged Abilities

Privileged Abilities are those that let players perform actions that are not readily available to all other players.

Example: The board game *History of the World* uses cards with special abilities that can be played only on certain turns in order to loosely follow the historical development of civilizations.

Instantiates: Gain Competence, Social Statuses, Competence Areas, Stimulated Planning, Penalties, Red Queen Dilemmas, Empowerment, Investments, Asymmetric Abilities, Orthogonal Unit Differentiation, Interruptible Actions

Modulates: Combat, Avatars, Fog of War, Character Development, Self-Facilitated Games, Penalties, Units, Team Development, Team Play, Characters, Player-Decided Distribution of Rewards & Penalties, Spawning, Timing, Social Interaction, Planned Character Development, Tools, Construction, Obstacles

Instantiated by: No-Ops, Chargers, Producers, Transfer of Control, Renewable Resources, Privileged Movement, Game Masters, New Abilities, Power-Ups, Combos, Area Control, Skills, Ownership

Modulated by: Budgeted Action Points, Team Balance, Planned Character Development

Potentially conflicting with: Player Balance, Team Balance

Privileged Movement

Being able to do a form of movement that other game elements cannot.

Example: the game of *Draughts* (or *Checkers*) requires that players promote at least one singleton to a doubleton in order to get the required *Privileged Movement* that is necessary to win.

Instantiates: Aim & Shoot, Privileged Abilities, Orthogonal Unit Differentiation

Modulates: Game World Navigation, Herd, Traverse, Inaccessible Areas, Obstacles, Movement, Narrative Structures, Enemies

Instantiated by:

Modulated by: Traces

Potentially conflicting with: Player Balance

Producer-Consumer

Producer-Consumer determines the lifetime of game elements, usually resources, and thus governs the flow of gameplay.

Example: In *Asteroids*, the rocks are produced at the start of each level and are consumed by the player shooting at them. The same principle applies to many other games where the level progression is based on eliminating, i. e., consuming, other game elements: the pills in *Pac-Man*, free space in *Qix*, and the aliens in *Space Invaders*.

Instantiates: Resource Management, Varied Gameplay

Modulates: Right Level of Complexity, Investments, Units, Resources

Instantiated by: Consumers, Converters, Producers

Modulated by: Container

Potentially conflicting with: Predictable Consequences

Producers

A game element, usually some kind of a resource, is produced as a consequence of a player action, certain game element configuration, or other type of game event.

Example: in fantasy roleplaying games hit points are regained, i. e. produced, by resting, taking health potions, and using healing spells.

Instantiates: Stimulated Planning, Tradeoffs, Construction, Producer-Consumer, Privileged Abilities, Empowerment, Renewable Resources

Modulates: Avatars, Resource Management, Units, Tradeoffs, Construction, Area Control, Resources, Game World, Power-Ups, Ownership, Characters

Instantiated by: Spawn Points, Spawning

Modulated by: Extended Actions

Potentially conflicting with:

Progress Indicators

The player is given information about his current progress towards a closure in addition to the configuration of game elements involved

Example: in *Zelda: Link to the Past* a subgoal is to gather nine crystals to be able to save the Princess Zelda. Progress in this task is indicated by arranging the crystals in an octagon, where the collected crystals are placed in the empty place holders.

Instantiates: Near Miss Indicators, Perceived Chance to Succeed, Hovering Closures

Modulates: Extended Actions, Time Limits, Rhythm-Based Actions, Quick Games, Race, Tension, Delayed Effects, Dexterity-Based Actions, Combos

Instantiated by: Connection, Illusionary Rewards, Traverse, Alignment, Movement, Score, Supporting Goals

Modulated by: Direct Information, Game State Overview

Potentially conflicting with: Uncertainty of Information, Memorizing

Public Information

All or part of the information of the game state is available during the game to people other than the players

Example: Players who have been killed in *Counter-Strike* can in the normal setups follow other players while they are waiting for their next turn to begin.

Instantiates: Spectators

Modulates: Social Statuses, Status Indicators, Strategic Knowledge, Achilles' Heels, Stimulated Planning, Trans-Game Information, Paper-Rock-Scissors, Extra-Game Actions

Instantiated by: Book-Keeping Tokens

Modulated by: God Views, Trans-Game Information, First-Person Views, Third-Person Views, Perfect Information, Goal Indicators, Symmetric Information, Outcome Indicators, Communication Channels, Game State Overview

Potentially conflicting with: Dedicated Game Facilitators, Asynchronous Games

Puzzle Solving

Actions that can be solved through deductive or inductive reasoning.

Example: *Sokoban* is a pure *Puzzle Solving* computer game where the only challenge the players have is to figure out how to push a number of boxes into the right parts of a maze.

Instantiates: Cognitive Immersion, Stimulated Planning, Experimenting, Gain Information, Memorizing, Game Mastery

Modulates: Turn-Based Games, Capture, Overcome, Evade

Instantiated by: Direct Information, Indirect Information, Achilles' Heels, Configuration, Gain Information, Traces, Movement

Modulated by: Limited Foresight, Time Limits, Irreversible Actions, Game State Overview, Reversability, Non-Renewable Resources, Right Level of Complexity

Potentially conflicting with: Save-Load Cycles, Replayability, Limited Planning Ability

Quick Games

Quick Games have a single concrete goal and few basic actions.

Example: *WarioWare, Inc.* has over 200 different *Quick Games* organized in themed groups. Almost all the games use just one basic action and one simple goal. The time it takes to complete one game is usually less than five seconds. One of the main charms of *WarioWare, Inc.* is that the games of a single theme group are presented to the player in random sequence; the main challenge is often to decipher the basic actions and goals of the games within the five seconds -- and to win!

Instantiates:

Modulates: Meta Games, Tournaments, Experimenting, Betting, Polyathlons, Turn Taking, Extra-Game Consequences, Tension

Instantiated by:

Modulated by: Time Limits, Randomness, Hovering Closures, Delayed Effects, Progress Indicators

Potentially conflicting with: Hierarchy of Goals, Varied Gameplay

Race

The competition between players to be the first to reach a certain goal, often being the first to a certain location following an approved route.

Example: *Golf* can be seen as a kind of *Race*. The players try to go through the track in as little game time as possible (bearing in mind that game time in *Golf* is measured by the amount of strokes).

Instantiates: Conflict, Competition, Excluding Goals, Supporting Goals, Movement, Area Control, Symmetric Goals

Modulates:

Instantiated by: Shared Resources, Exploration, Score, Gain Competence, Individual Rewards

Modulated by: Continuous Goals, Time Limits, Status Indicators, Movement Limitations, Handicaps, Interferable Goals, Progress Indicators, Ghosts, Maneuvering, Tiebreakers, Tied Results, Strategic Knowledge, Shared Rewards

Potentially conflicting with:

Randomness

Effects or events in the game cannot be exactly predicted.

Example: Many roleplaying games use random encounters to spice up the *Game World* and give the players the impression that there is more to the *Game World* than they experience.

Instantiates: Limited Foresight, Strategic Knowledge, Player Balance, Memorizing, Balancing Effects, Risk/Reward, Imperfect Information, Tension, Luck, Limited Planning Ability

Modulates: Never Ending Stories, Quick Games, Characters, Perceived Chance to Succeed, Narrative Structures, Asymmetric Resource Distribution, Betting, Skills, Illusion of Influence, Delayed Effects, Predictable Consequences, Uncertainty of Information, Game Masters

Instantiated by: Damage, Combat, Cards, Drawing Stacks, Dice, Paper-Rock-Scissors, Tile-Laying

Modulated by: Non-Renewable Resources

Potentially conflicting with: Perceivable Margins, Perfect Information, Game Masters, Game Mastery, Analysis Paralysis

Real-Time Games

The progression of game time during play is tied to the real time.

Example: Real-time strategy games, such as those in the *WarCraft* and *StarCraft* series, modify the usually slow pace of strategy games by making the game system continue without player interaction.

Instantiates: Aim & Shoot, Spatial Immersion, No-Ops, Maneuvering, Sensory-Motoric Immersion, The Show Must Go On

Modulates: Tick-Based Games, Turn-Based Games, Capture, Limited Planning Ability, Disruption of Focused Attention, Combat, Synchronous Games, Asynchronous Games, Social Interaction

Instantiated by:

Modulated by: Attention Swapping, Self-Facilitated Games, Rhythm-Based Actions, Dedicated Game Facilitators, Timing, Dexterity-Based Actions, Save-Load Cycles, Cut Scenes, Game Pauses, Communication Channels, The Show Must Go On, Budgeted Action Points

Potentially conflicting with: Turn Taking, Turn-Based Games, Downtime

Reconfigurable Game World

The player can reconfigure the game world itself, including the basic relationships and attributes of the game elements and the rules governing the dynamics of these relationships.

Example: Games that allow the players to select different difficulty levels for each game instance.

Instantiates: Varied Gameplay, Replayability, Handicaps, Memorizing, Game World

Modulates: Right Level of Difficulty, Player Balance

Instantiated by: Tiles, Tile-Laying

Modulated by: Moveable Tiles

Potentially conflicting with: Right Level of Difficulty

Reconnaissance

Patrolling a known area in the game world to detect changes.

Example: In the board game *Space Hulk*, the player playing space marines can detect the presences and location of the enemy genestealers in the spaceship but not there exact number, which may make *Reconnaissance* missions necessary to find where enemy buildups are taking place.

Instantiates: Continuous Goals, Gain Information, Traverse, Stealth

Modulates: Rhythm-Based Actions, Secret Resources, Guard

Instantiated by: Attention Swapping, Fog of War, Renewable Resources, Area Control, Enemies

Modulated by: Deadly Traps, Strategic Locations, Traces, Alarms, Game State Overview, Secret Resources

Potentially conflicting with: Game State Overview

Red Herrings

Information or potential goals that are designed to either mislead or distract the player

Example: random wandering monsters in many roleplaying games can distract and in some cases also mislead players.

Instantiates: Indirect Information, Disruption of Focused Attention

Modulates: Surprises, Anticipation, Right Level of Complexity, Narrative Structures, Varied Gameplay, Tension, Conceal

Instantiated by: Fog of War, Imperfect Information

Modulated by: Traces, Clues, Helpers

Potentially conflicting with: Direct Information, Perfect Information, Clues, Traces, Helpers, Supporting Goals

Red Queen Dilemmas

Players have to constantly progress in the game in order to maintain a relative level of power or success compared to other players.

Example: in *Monopoly* the players are almost forced to stay at the same pace as the leading player in order to have any chance to succeed in the later game.

Instantiates: Competition, Smooth Learning Curves

Modulates: Player Balance, Game Mastery

Instantiated by: Improved Abilities, New Abilities, Privileged Abilities, Resources

Modulated by: Social Statuses, Rewards, Empowerment, Right Level of Difficulty

Potentially conflicting with: Player Balance

Renewable Resources

A type of resource of which more instances can be generated during game play.

Example: the basic resources in *Age of Empires* are renewable from the players' point of view, at least in the start of the scenario, but there is only a certain amount of these resources available during the whole scenario.

Instantiates: Hierarchy of Goals, Resource Management, Reconnaissance, Privileged Abilities, Tradeoffs

Modulates: Damage, Pick-Ups, Units, Resources, Social Dilemmas, Limited Resources, Transfer of Control, Gain Ownership, Lives, Characters

Instantiated by: Resource Generators, Closed Economies, Chargers, Producers, Budgeted Action Points

Modulated by: Pick-Ups, Time Limits, Chargers, Converters, Diminishing Returns, Ownership, Controllers, Asymmetric Resource Distribution

Potentially conflicting with: Non-Renewable Resources

Replayability

The level to which a game provides new challenges or experiences when played again.

Example: The multiplayer first-person shooters *Team Fortress Classic* and *Return to Castle Wolfenstein* and the *Battlefield* series allow players to choose a character class to play. This gives them special abilities, which means that beyond the normal differences in gameplay due to varieties in players and levels, players also have different possibilities of what to do and have different roles in their teams.

Instantiates: Trans-Game Information

Modulates: Inaccessible Areas

Instantiated by: High Score Lists, Reconfigurable Game World, Strategic Knowledge, Asymmetric Abilities, Tournaments, Conceal, Selectable Sets of Goals, Optional Goals, Asymmetric Goals, Easter Eggs, Freedom of Choice, Game Mastery, Varied Gameplay, Save-Load Cycles, Reversability, Score

Modulated by: Strategic Knowledge, Near Miss Indicators, Cognitive Immersion, Dedicated Game Facilitators, Imperfect Information

Potentially conflicting with: Surprises, Trans-Game Information, Unknown Goals, Memorizing, Narrative Structures, Tension, Puzzle Solving, Exploration

Rescue

Rescue is the goal of freeing someone or something that is guarded.

Example: Some missions in *Counter-Strike* involve scientists that the terrorists have to *Guard* and the counter-terrorist *Team* tries to free and lead to a safe zone.

Instantiates: Conflict, Preventing Goals

Modulates: Guard, Narrative Structures

Instantiated by:

Modulated by: Goal Points, Safe Havens, Overcome, Alarms, Deadly Traps, Obstacles, Boss Monsters, Stealth, Ownership

Potentially conflicting with:

Resource Generators

Resource Generators are specific places or game elements producing resources, in effect tying the production of resources in the game to a particular place in the game world.

Example: *WarCraft*, as well asmany other real-time strategy games, have specific locations, such as cities, which generate resources for the player controlling the location.

Instantiates: Exploration, Strategic Locations, Ephemeral Goals, Renewable Resources, Trading

Modulates: Gain Ownership, Levels, Resources, Game World, Controllers

Instantiated by: Dynamic Goal Characteristics, Spawn Points, Chargers

Modulated by: Mule, Eliminate, Limited Resources, Outstanding Features

Potentially conflicting with:

Resource Locations

Resource Locations are the locations where resources are found in the game world.

Example: the places where trees, bushes, and mines are located in *Age of Empires* are *Resource Locations* for the basic resources of the game.

Instantiates: Strategic Locations

Modulates: Inaccessible Areas, Gain Ownership

Instantiated by: Pick-Ups, Chargers, Controllers

Modulated by: Outstanding Features, Traces

Potentially conflicting with:

Resource Management

The players have to plan, manage, and control resource flows within the game in order to reach the goals of the game.

Example: Professional team sports such as *Soccer* and *Ice Hockey* have a high level *Resource Management* layer for managing the composition of the teams.

Instantiates: Cognitive Immersion, Stimulated Planning, Risk/Reward, Freedom of Choice, Game Mastery, Tradeoffs

Modulates: Right Level of Complexity, Social Organizations, Team Development, Tiebreakers

Instantiated by: Attention Swapping, Producer-Consumer, Combat, Renewable Resources, Player-Decided Distribution of Rewards & Penalties, Betting, Investments, Units, Limited Resources

Modulated by: Consumers, Ownership, Container, Producers, Gain Ownership, Converters

Potentially conflicting with: Book-Keeping Tokens

Resources

Game elements that are used by players to enable actions in a game.

Example: *Victoria* is an example of a computer game with complex use of resource refinement, for example producing a Tank unit in the game requires the production of the Tank commodity. This commodity, in turn, requires *Resources* that are refined from other *Resources*, et cetera.

Instantiates: Strategic Knowledge, Stimulated Planning, Penalties, Red Queen Dilemmas, Score, Varied Gameplay, Tradeoffs, Easter Eggs, Rewards, Collecting

Modulates: Exploration, Emotional Immersion, Player Balance, Construction, Tiebreakers, Area Control, Turn Taking, Characters, Game World, Supporting Goals, Player-Decided Distribution of Rewards & Penalties

Instantiated by: Time Limits, Units, Clues, The Show Must Go On, Lives, Budgeted Action Points, Indirect Control, Score

Modulated by: Damage, Aim & Shoot, Shared Resources, Bidding, Time Limits, Resource Generators, Trading, Closed Economies, Consumers, Chargers, Producers, Asymmetric Resource Distribution, Container, Secret Resources, Non-Renewable Resources, Renewable Resources, Limited Resources, Ownership, Transfer of Control, Handicaps, Diminishing Returns, Betting, Producer-Consumer, Investments, Symmetric Resource Distribution

Potentially conflicting with:

Reversability

The possibility of returning to a previous game state of the whole or just parts of the game.

Example: in *Tag* the player who is "it" can revert to being chased by the new "it" when the player catches another player.

Instantiates: Experimenting, Handicaps, Replayability

Modulates: Buttons, Puzzle Solving, Ultra-Powerful Events, Risk/Reward, Narrative Structures, Extra-Game Actions

Instantiated by: Self-Facilitated Games, Closed Economies, Role Reversal, Save-Load Cycles, Freedom of Choice

Modulated by: Single-Player Games

Potentially conflicting with: Persistent Game Worlds, Tension

Rewards

The player receives something perceived as positive, or is relieved of a negative effect, for completing goals in the game.

Example: All games that can be won have the main reward of winning the game.

Instantiates: Social Statuses, Surprises, Strategic Knowledge, Stimulated Planning, Emotional Immersion, Anticipation, Balancing Effects, Tension, Planned Character Development, Collecting, Competition

Modulates: Attention Swapping, Character Development, Penalties, Ephemeral Goals, Red Queen Dilemmas, Social Dilemmas, Player Defined Goals, Narrative Structures, Game Mastery, Alternative Reality, Area Control, Skills, Risk/Reward, Combos, Characters, Bidding, Trading, Betrayal, Player Killing

Instantiated by: Resources, Investments, Improved Abilities, New Abilities, Betting, Individual Rewards, Shared Rewards, Ownership, Tools

Modulated by: Continuous Goals, Penalties, Committed Goals, Unknown Goals, Diminishing Returns, Balancing Effects, Identification, Player Defined Goals, Mutual Goals, Freedom of Choice, Player-Decided Distribution of Rewards & Penalties, Outcome Indicators, Geometric Rewards for Investments, Arithmetic Rewards for Investments, Extra-Game Consequences

Potentially conflicting with: Consistent Reality Logic

Rhythm-Based Actions

Actions that require players to time their actions several times in a row.

Example: Early sports games such as *Decathlon* primarily stimulated sports by requiring players to perform long sequences of *Rhythm-Based Actions* and judging the outcome from how well the players kept the rhythm.

Instantiates: Game Mastery, Sensory-Motoric Immersion

Modulates: Real-Time Games, Configuration, Overcome

Instantiated by: Deadly Traps, Extended Actions, Timing, Ultra-Powerful Events, Combos, Moveable Tiles, The Show Must Go On

Modulated by: Right Level of Complexity, Illusionary Rewards, Reconnaissance, Progress Indicators, Right Level of Difficulty

Potentially conflicting with:

Right Level of Complexity

That the level of complexity by the player in the game is the one intended by the game design.

Example: Real-time strategy games and advanced simulations such as *Europa Universalis II* are only playable because computers can handle the complexity of the rules and interactions between huge amount of game elements. Some also allow players to modify how much complexity they should have to handle by offering ways of automating certain actions.

Instantiates: Cognitive Immersion, Constructive Play, Smooth Learning Curves, Experimenting, Creative Control, Game Mastery, Analysis Paralysis, Limited Planning Ability, Right Level of Difficulty

Modulates: Predictable Consequences, Limited Foresight, Stimulated Planning, Rhythm-Based Actions, Downtime, Puzzle Solving, Illusion of Influence

Instantiated by: Narrative Structures

Modulated by: Attention Swapping, Producer-Consumer, Red Herrings, Resource Management, Converters, Decreased Abilities, Perfect Information, Role Reversal, Ability Losses, Indirect Control, Extra-Game Information, Combos

Potentially conflicting with:

Right Level of Difficulty

That the level of difficulty experienced by the player is the one intended by the game design.

Example: Adventures that can be bought for many types of tabletop roleplaying games are categorized after which levels the players' characters should have. Although a *Game Master* may use any adventure for any group of characters, the *Right Level of Difficulty* will most probably only occur if the players have the right levels.

Instantiates: Smooth Learning Curves, Empowerment, Illusion of Influence, Game Mastery, Perceived Chance to Succeed, Sensory-Motoric Immersion, Limited Planning Ability, Tension

Modulates: Multiplayer Games, Red Queen Dilemmas, Player Balance, Single-Player Games, Maneuvering, Higher-Level Closures as Gameplay Progresses, Rhythm-Based Actions

Instantiated by: Time Limits, Achilles' Heels, Selectable Sets of Goals, Balancing Effects, Game Masters, Right Level of Complexity, Handicaps, Varied Gameplay

Modulated by: Attention Swapping, Reconfigurable Game World, Decreased Abilities, Supporting Goals, Enemies, Tradeoffs, Levels, Ability Losses, Easter Eggs, Narrative Structures, Disruption of Focused Attention, Clues, Extra-Game Information, Obstacles, Skills, Limited Planning Ability, Traces, Experimenting

Potentially conflicting with: Reconfigurable Game World, Ephemeral Goals

Risk/Reward

That the chance for receiving a Reward in the game is linked to some risk of receiving a Penalty if the player fails to acquire the Reward.

Example: Lotteries present simple *Risk/Reward* choices where often a small investment gives a small chance of winning a large *Reward* but the only risk lies in losing the initial investment. That the sum of small investments are more that the large *Reward* seldom discourages players to feel tension or luck influence, and this may be the only way for the players to have any chance of getting the large *Reward*.

Instantiates: Stimulated Planning, Tradeoffs, Game Mastery, Tension

Modulates: Cognitive Immersion, Committed Goals, Investments, Stealth, Mule, Perceived Chance to Succeed, Chargers, Player Killing, Geometric Rewards for Investments

Instantiated by: Combat, Extended Actions, Leaps of Faith, Movement Limitations, Resource Management, Interruptible Actions, Experimenting, Limited Resources, Selectable Sets of Goals, Role Reversal, Betrayal, Freedom of Choice, Player-Decided Distribution of Rewards & Penalties, Area Control, Betting, Randomness, Luck, Bluffing, Uncommitted Alliances, Guard, Imperfect Information

Modulated by: Damage, Meta Games, Individual Penalties, Penalties, Committed Goals, Emotional Immersion, Social Dilemmas, Decreased Abilities, Supporting Goals, Rewards, New Abilities, Skills, Spawning, Geometric Rewards for Investments, Arithmetic Rewards for Investments, Reversability

Potentially conflicting with: Predictable Consequences

Role Reversal

The shift between two different roles which are each others opposite.

Example: when *Pac-Man* eats a power-pill he can start chasing the ghosts without risk, in effect causing a role reversal between the hunter and the hunted.

Instantiates: Conflict, Surprises, Penalties, Dynamic Goal Characteristics, Asymmetric Goals, Reversability, Risk/Reward, New Abilities, Ability Losses

Modulates: Player Balance, Empowerment, Narrative Structures, Right Level of Complexity

Instantiated by: Turn-Based Games, Dynamic Alliances, King of the Hill, Betrayal

Modulated by: Score

Potentially conflicting with:

Roleplaying

Players have characters with at least somewhat fleshed out personalities. The play is centered on making decisions on how these characters would take actions in staged imaginary situations.

Example: In Live Action Roleplaying Games (LARPs) the players act out their characters in real life and not only sit around the table talking to each other. The real world is used as the basis for the setting of the game, and sometimes the players put in countless hours of work to make the settings and their characters fit the theme of the game as well as possible. LARPs, of course depending on the play style, are usually more oriented on acting out the roles of the characters than tabletop roleplaying games, and some play styles are closer to improvisational theater than playing games.

Instantiates: Emotional Immersion, Creative Control, Storytelling, Alternative Reality, Social Interaction

Modulates: Persistent Game Worlds, Team Play, Narrative Structures

Instantiated by: Game Masters, Storytelling

Modulated by: Avatars, Character Development, Team Development, Identification, Characters, Game World, Player Constructed Worlds

Potentially conflicting with:

Safe Havens

Save Havens are locations in the game world where game elements under the players' control are safe from the actions of other players or the game events.

Example: many first-person shooters have *Safe Havens*, some that are temporary and some that cannot be entered after being left. These *Safe Havens* are used to avoid the possibility of spawn killing, i. e. the player being killed immediately after having been being brought back into the game.

Instantiates: Stimulated Planning, Strategic Locations

Modulates: Save Points, Goal Points, Stealth, Rescue, Traverse, Inaccessible Areas, Spawn Points, Negotiation, Dynamic Alliances, Experimenting, Spawning, Strategic Locations

Instantiated by:

Modulated by:

Potentially conflicting with: Time Limits, Deadly Traps

Save Points

Save Points are the points in gameplay where the players can choose to save the game state so that they can return to it later.

Example: *Final Fantasy VII* has specific locations where the player can save the current game state.

Instantiates: Traverse, Closure Points

Modulates: Collection, Levels, Save-Load Cycles

Instantiated by:

Modulated by: Hierarchy of Goals, Safe Havens

Potentially conflicting with: Score

Save-Load Cycles

The actions of saving and loading game states.

Example: The single-player campaigns *Return to Castle Wolfenstein* and most other first-person shooters allow players to save the game state whenever they wish. A recent exception is *Far Cry* where the game state is automatically saved as soon as players reach certain locations.

Instantiates: Stimulated Planning, Trans-Game Information, Smooth Learning Curves, Experimenting, Downtime, Replayability, Freedom of Choice, Spawning, Extra-Game Actions, Game Pauses, Reversability

Modulates: Direct Information, Near Miss Indicators, Real-Time Games, Single-Player Games, Tension

Instantiated by: Dedicated Game Facilitators

Modulated by: Save Points

Potentially conflicting with: Surprises, Leaps of Faith, Penalties, Multiplayer Games, Irreversible Actions, Puzzle Solving, Immersion, Ability Losses, Score

Score

Score is the numerical representation of the player's success in the game, often not only representing the success but also defining it.

Example: *Pac-Man* gives players three different possibilities to gain points: eating pills, capturing ghosts while under the effect of a power pill, or collecting the bonus object when it appears. The player's *Score* is shown in the upper part of the screen next to the current high *Score*.

Instantiates: Continuous Goals, Meta Games, Status Indicators, Stimulated Planning, Trans-Game Information, Race, Investments, Dynamic Alliances, Balancing Effects, Tied Results, Replayability, Extra-Game Consequences, Progress Indicators, Resources, Game State Overview, Collecting

Modulates: Role Reversal, Player Elimination, Turn Taking, Gain Ownership, Single-Player Games, King of the Hill, Tournaments

Instantiated by: Resources

Modulated by: Pick-Ups, Handicaps, Tiebreakers

Potentially conflicting with: Save Points, Save-Load Cycles

Secret Alliances

Alliances, or the special characteristics of alliances, which by definition are unknown to at least some of the players.

Example: one of the most entertaining examples of use of *Secret Alliances* in games is *Paranoia*, a roleplaying game set in a distant Orwellian future controlled by a gigantic computer. The players in *Paranoia* are troubleshooters, whose task is to help the computer to uncover the sinister plans of mutants and different secret societies. Each of the players, of course, is also a mutant and belongs to at least one secret society.

Instantiates:

Modulates: Alliances, Mutual Goals, Social Interaction

Instantiated by: Player Decided Results, Asymmetric Information, Uncertainty of Information, Player-Decided Distribution of Rewards & Penalties

Modulated by: Indirect Information

Potentially conflicting with:

Secret Resources

Secret Resources are resources that are unknown to at least some of the players.

Example: almost all card games have *Secret Resources*, the card hand, which is known to the player owning the cards but unknown to the other players. *Poker* is perhaps the most famous card game where the game play is based on the asymmetries of information available about the resources of the other player.

Instantiates: Exploration, Gain Information, Limited Planning Ability

Modulates: Resources, Game World, Reconnaissance

Instantiated by: Card Hands, Imperfect Information, Asymmetric Information, Uncertainty of Information

Modulated by: Reconnaissance

Potentially conflicting with:

Selectable Sets of Goals

The player can select the goals he tries to achieve in the game from a set of available goals.

Example: The different worlds in *Super Mario 64* offer different sets of goals providing players with selectable sets of *Selectable Sets of Goals*. The player is also free to move within these worlds and goals without needing to complete them in any specific order.

Instantiates: Replayability, Strategic Knowledge, Risk/Reward, Right Level of Difficulty, Varied Gameplay, Tradeoffs, Freedom of Choice

Modulates: Hierarchy of Goals, Unknown Goals, Excluding Goals

Instantiated by: Configuration, Predefined Goals, Optional Goals, Area Control

Modulated by: Ephemeral Goals, Incompatible Goals, Traverse

Potentially conflicting with: Predictable Consequences

Self-Facilitated Games

Games that require that the players ensure that the rules are being followed and require the players to perform any necessary book-keeping actions.

Example: all board games and card games require that the players perform all necessary administrative and book-keeping actions and check that the rules are being followed.

Instantiates: Social Statuses, Player Decided Results, Negotiation, Memorizing, Empowerment, Investments, Extra-Game Actions, Reversability, Synchronous Games

Modulates: Tournaments, Real-Time Games, Multiplayer Games, Turn-Based Games, Player Constructed Worlds, Betting

Instantiated by: Turn Taking, Game Masters

Modulated by: Strategic Knowledge, Privileged Abilities, Storytelling, Handicaps

Potentially conflicting with: Surprises, Time Limits, Ultra-Powerful Events, Dedicated Game Facilitators, Narrative Structures

Sensory-Motoric Immersion

The flow experience of performing repetitious actions, which provide sensory feedback.

Example: dance games, such as *Dance Dance Revolution*, have strong basis for *Sensory-Motoric Immersion* as the basic actions are simple, repetitive, and especially because the action sequences are tied to the rhythm of the background music.

Instantiates: Immersion

Modulates:

Instantiated by: Real-Time Games, Focus Loci, Dexterity-Based Actions, Rhythm-Based Actions, Right Level of Difficulty

Modulated by: Constructive Play

Potentially conflicting with: Disruption of Focused Attention, Varied Gameplay

Shared Penalties

The penalty for a failure to meet a requirement in the game is shared between some or all of the participating players.

Example: the loss against the other team in *Soccer* and other team-oriented sports is, obviously, a shared loss for the team members.

Instantiates: Penalties, Social Dilemmas, Mutual Goals

Modulates: Individual Penalties, Collaborative Actions, Alliances, Team Play, Social Organizations, Mutual Goals

Instantiated by: Tied Results, Team Elimination

Modulated by: Shared Resources, Player-Decided Distribution of Rewards & Penalties, Player Elimination

Potentially conflicting with: Individual Penalties, Tiebreakers, Illusion of Influence

Shared Resources

The players, or some of the players, have at least potential access to the same resources.

Example: the railroad tracks in *TransAmerica* are continuously *Shared Resources*. Once laid down on the game board they are beneficial for all players who have a connection to the tracks.

Instantiates: Social Dilemmas, Social Interaction, Exploration, Negotiation, Tension, Competition, Race, Time Limits, Symmetric Resource Distribution

Modulates: Ownership, Resources, Penalties, Cooperation, Social Interaction, Social Organizations, Alliances, Shared Penalties, Shared Rewards

Instantiated by:

Modulated by: Mutual Goals, Team Play, Strategic Knowledge

Potentially conflicting with:

Shared Rewards

The players who were involved in some way in reaching a goal in the game share the reward.

Example: in *Carcassonne* one possible way to gain points is to finish building town by laying out tiles of town walls and town interiors. The player placing a tile to a town can also claim the ownership of the town by placing a knight. It is possible that when the town is finished that two or more players have claims on the same town. If several players have the same number of town in the town, all players receive the same amount of points as if there would have been only one player claiming the town.

Instantiates: Cooperation, Balancing Effects, Rewards, Mutual Goals, Delayed Reciprocity, Uncommitted Alliances

Modulates: Collaborative Actions, Competition, Alliances, Team Play, Social Interaction, Individual Rewards, Race, Social Organizations, Ownership

Instantiated by: Tied Results, Mutual Goals

Modulated by: Shared Resources, Negotiation, Player-Decided Distribution of Rewards & Penalties

Potentially conflicting with: Conflict, Excluding Goals, Individual Rewards, Tiebreakers

Shrinking Game World

The game world shrinks and thus restricts players' movement in the game.

Example: One of the multiplayer levels in *Half-Life* allowed players to activate an air strike. All those not in a bunker complex when the air strike hit was killed, in effect reducing the *Game World* to the bunker for parts of the game play.

Instantiates: Strategic Knowledge, Movement Limitations, Ultra-Powerful Events, The Show Must Go On, Deadly Traps, Higher-Level Closures as Gameplay Progresses, Tension

Modulates: Game World, Conflict

Instantiated by:

Modulated by: Tiles, Irreversible Actions

Potentially conflicting with: Freedom of Choice

Single-Player Games

Games where there is only one player in a game instance.

Example: Puzzles of any kind can be classified as *Single-Player Games* although they are a borderline case between games and game-like activities, because they do not typically have the conflict situations common to games in general.

Instantiates: Individual Penalties, Individual Rewards

Modulates: High Score Lists, Reversability

Instantiated by:

Modulated by: Meta Games, Spectators, Exploration, Downtime, Dedicated Game Facilitators, Ghosts, Save-Load Cycles, Easter Eggs, Imperfect Information, Score, Narrative Structures, Cut Scenes, Game Pauses, Right Level of Difficulty, Limited Planning Ability, Asymmetric Resource Distribution

Potentially conflicting with: Social Interaction

Skills

The numerical representation of how likely a Unit or Character is to succeed with an action, and what possible consequences the action has.

Example: the *Deus Ex* series of computer games allows players to develop skill areas by acquiring implants.

Instantiates: Gain Competence, Competence Areas, Character Development, Planned Character Development, Privileged Abilities, Varied Gameplay, Luck

Modulates: Predictable Consequences, Multiplayer Games, Team Development, Enemies, Characters, Perceived Chance to Succeed, Risk/Reward, Orthogonal Unit Differentiation, Right Level of Difficulty, Handicaps

Instantiated by:

Modulated by: Damage, Penalties, Chargers, Budgeted Action Points, Decreased Abilities, Diminishing Returns, Improved Abilities, Dice, Rewards, Randomness, Tools, Power-Ups, Investments, Handicaps

Potentially conflicting with:

Smooth Learning Curves

Games designed to provide players with the possibility of smoothly progressing from novice to master.

Example: Many first-person shooters can be played both alone and against opponents through the Internet. In these games, the single player game usually provides *Smooth Learning Curves* that can be seen as a preparation for playing the multiplayer versions.

Instantiates: Immersion, Game Mastery

Modulates: Multiplayer Games, Perceived Chance to Succeed, Illusion of Influence

Instantiated by: Limited Foresight, Red Queen Dilemmas, Experimenting, Dedicated Game Facilitators, Luck, Right Level of Difficulty, Right Level of Complexity, Combos, Clues, Helpers, Extra-Game Information, Balancing Effects, Save-Load Cycles, Handicaps

Modulated by: Strategic Knowledge, Inaccessible Areas, New Abilities, Levels

Potentially conflicting with:

Social Dilemmas

The players tend to compete against each other even though cooperation would be beneficial for all players involved.

Example:

Instantiates: Emotional Immersion, Social Interaction, Tension, Social Organizations

Modulates: Competition, Alliances, Cooperation, Dynamic Alliances, Perceived Chance to Succeed, Risk/Reward, Tied Results

Instantiated by: Shared Resources, Shared Penalties, Individual Rewards, Delayed Reciprocity, Betrayal, Freedom of Choice, Enemies, Social Organizations

Modulated by: Conflict, Renewable Resources, Rewards

Potentially conflicting with: Individual Penalties

Social Interaction

Social Interaction is when two or more players have two-way communication between each other, i.e., the other players can respond to the individual player's communication.

Example: Many massively multiplayer online roleplaying games provide several methods of *Social Interaction* for the players. Those that are *Avatar* based, for example *Anarchy Online* and *Dark Age of Camelot*, allow the players to customize parts of their repertoire for non-verbal communication through emoting. Even without special emote gestures the non-verbal communication in these games is possible using the *Avatar's* orientation, speed of movement, and basic actions, such as jumping, to convey information about the player's intention (moving towards a target), current feelings (changing direction in rapid fashion to state boredom), and guidance (jumping up and down in the same place to direct other players into a specific location).

Instantiates: Collaborative Actions, Alliances, Emotional Immersion, Illusion of Influence, Freedom of Choice, Social Organizations, Bluffing

Modulates: Player Constructed Worlds

Instantiated by: Shared Resources, Social Dilemmas, Dynamic Alliances, Persistent Game Worlds, Team Play, Game Masters, Turn Taking, Storytelling, Roleplaying, Cooperation, Trading

Modulated by: Social Statuses, Shared Resources, Indirect Information, Competition, Agents, Identification, Betrayal, Secret Alliances, Shared Rewards, Social Organizations, Uncommitted Alliances, Game Pauses, Asymmetric Resource Distribution, Privileged Abilities, Delayed Reciprocity, Player Decided Results, Bluffing, Real-Time Games, Synchronous Games, Multiplayer Games

Potentially conflicting with: Single-Player Games

Social Organizations

Social Organizations are more or less stable group of players who have common long-term interests within the game.

Example: persistent MMORPGs are designed to be good environments for forming stable *Social Organizations* as the players stable identity is taken for granted; there are explicitly designed complementary roles for the players right from the beginning; the games often provide also further specialization possibilities for the players and some of the pre-designed tasks, such as killing a powerful monster, are impossible to achieve without longer term coordination of groups activities. It is no wonder that these games very often provide in-game mechanisms for forming and maintaining guilds and other types of stable *Social Organizations*.

Instantiates: Alliances, Team Play, Varied Gameplay, Social Dilemmas, Delayed Reciprocity

Modulates: Competition, Cooperation, Team Development, Social Interaction

Instantiated by: Player Decided Results, Asymmetric Abilities, Investments, Handles, Social Interaction, Social Dilemmas

Modulated by: Social Statuses, Conflict, Competence Areas, Shared Resources, Status Indicators, Shared Penalties, Resource Management, Tournaments, Multiplayer Games, Communication Channels, Identification, Persistent Game Worlds, Negotiation, Shared Rewards, Orthogonal Unit Differentiation

Potentially conflicting with: Uncommitted Alliances

Social Statuses

Social Status is defined by the extent to which the player is admired, esteemed or approved by the other players of the game as well as by persons outside the game.

Example: in MMORPGs the level of the players is often displayed to other players. This is an explicit indicator of *Social Status* based on past performances. If the game also supports guilds or other kinds of stable organizations the rank or the level in the guild might also be displayed.

Instantiates: Empowerment, Extra-Game Consequences

Modulates: Player Decided Results, Alliances, Social Interaction, Cooperation, Player Killing, Red Queen Dilemmas, Social Organizations

Instantiated by: Rewards, Penalties, Illusionary Rewards, Handles, Privileged Abilities, Status Indicators, Self-Facilitated Games, Creative Control, Investments, Team Balance, Spectators, Trans-Game Information, Game Mastery, Competence Areas, Competition, High Score Lists

Modulated by: Persistent Game Worlds, Public Information, Competition, Individual Rewards

Potentially conflicting with:

Spatial Immersion

Perceiving movement in the game from the perspective of oneself moving.

Example: first-person shooters easily give players *Spatial Immersion* due to the first-person view the games use and the freedom of movement and view they provide.

Instantiates: Game World Navigation, Immersion, Anticipation

Modulates:

Instantiated by: Aim & Shoot, Surprises, Avatars, Focus Loci, Disruption of Focused Attention, Movement, Maneuvering, First-Person Views, Third-Person Views, Real-Time Games, Game World, Dexterity-Based Actions, Limited Planning Ability

Modulated by: Attention Swapping, Cameras

Potentially conflicting with: God Views, Game World Navigation

Spawn Points

Positions in the game where Units, Avatars, or Enemies appear.

Example: *Battlefield Vietnam* offers some novel variations in S*pawn Points*: vehicles that can be steered around the game area and tunnel exits that can be created by player actions.

Instantiates: Resource Generators, Producers, Strategic Locations

Modulates: Game World, Spawning, Levels, Lives

Instantiated by:

Modulated by: Safe Havens, Inaccessible Areas, Camping

Potentially conflicting with:

Spawning

The action of an Avatar appearing in the game world.

Example: The arcade game *Gauntlet* let players enter ongoing games by being spawned into locations near the other players.

Instantiates: Producers, Downtime, Game Pauses

Modulates: Early Elimination, Player Balance, Freedom of Choice, Risk/Reward, Narrative Structures, Team Balance, Player Killing, Team Elimination

Instantiated by: Penalties, Lives, Save-Load Cycles

Modulated by: Safe Havens, Irreversible Actions, Inaccessible Areas, Strategic Locations, Balancing Effects, Spawn Points, Ability Losses, Camping, Tools, Privileged Abilities

Potentially conflicting with: Early Elimination, Consistent Reality Logic

Spectators

People, possibly former, current, or future players, who observe the actions that players do in a game without being able to affect the game themselves.

Example: most tournaments have spectators to the individual games that are played. This allows people participating in the tournament but not in the individual game to follow the gameplay as well as letting other interested people follow the whole tournament.

Instantiates: Social Statuses, Downtime, Strategic Knowledge, Penalties

Modulates: Early Elimination, Tournaments, Game Mastery, Game State Overview, Player Elimination, Extra-Game Actions, Single-Player Games

Instantiated by: Ultra-Powerful Events, Turn Taking, Public Information

Modulated by: Meta Games

Potentially conflicting with:

Status Indicators

Players are given information about a certain part of the game state or other players through other means than observing a game element

Example: the jewel-shaped marker in *The Sims* is a *Status Indicator* that shows which character is controlled by the player.

Instantiates: Social Statuses

Modulates: Damage, Time Limits, Game State Overview, First-Person Views, Focus Loci, Budgeted Action Points, Social Organizations, Tension, Race

Instantiated by: Score, Outstanding Features

Modulated by: Direct Information, Public Information

Potentially conflicting with: Uncertainty of Information, Immersion

Stealth

Stealth is the goal to move through a certain area and perform an action without being detected.

Example: Many children's' games are based on one person trying to find the other players while at the same time trying to *Guard* an area that is a safe zone for the other players. If the other players, by a combination of stealth and running, make it to the safe zone they are home free and do not have to be the player guarding the safe zone in the next game.

Instantiates: Evade, Stimulated Planning, Tension, Movement, Area Control

Modulates: Delivery, Rescue

Instantiated by: Reconnaissance

Modulated by: Safe Havens, No-Ops, Guard, Alarms, Risk/Reward, Tradeoffs, Traverse, Gain Ownership, Camping

Potentially conflicting with: Herd

Stimulated Planning

Games that encourage players to plan about certain aspects of the game.

Example: Games such as *Go* and *Chess* that provide players with perfect information and no unpredictability to the effects of actions provide ample support for *Stimulated Planning*.

Instantiates: Cognitive Immersion, Analysis Paralysis, Empowerment, Timing, Game Mastery

Modulates: Timing

Instantiated by: Direct Information, Extended Actions, Predictable Consequences, Discard Piles, Strategic Knowledge, Collaborative Actions, Score, Safe Havens, Privileged Abilities, Limited Set of Actions, Rewards, Ultra-Powerful Events, Irreversible Actions, Turn Taking, Planned Character Development, Freedom of Choice, Delayed Effects, Experimenting, Creative Control, Tradeoffs, Risk/Reward, Puzzle Solving, Resource Management, Illusion of Influence, Orthogonal Unit Differentiation, Resources, Save-Load Cycles, Extra-Game Actions, Container, Producers, Converters, Book-Keeping Tokens, Game State Overview, Perfect Information, Investments, Units, Cut Scenes, Symmetric Information, Stealth

Modulated by: Attention Swapping, Limited Foresight, Near Miss Indicators, Right Level of Complexity, Public Information, Limited Resources

Potentially conflicting with:

Storytelling

The act of telling storieswithin the game.

Example: The role of game masters in roleplaying games is partly that of storyteller, merging the preplanned events with the actions the players have performed within the *Game World*. The gameplay in these games is based on *Storytelling* assisted with background material such as maps and rulebooks.

Instantiates: Player Decided Results, Emotional Immersion, Never Ending Stories, Creative Control, Freedom of Choice, Game Mastery, Narrative Structures, Roleplaying, Player Constructed Worlds, Social Interaction, Extra-Game Actions

Modulates: Strategic Knowledge, Self-Facilitated Games, Trans-Game Information, Game World, Persistent Game Worlds, Characters, Alternative Reality, Consistent Reality Logic, Extra-Game Information

Instantiated by: Dedicated Game Facilitators, Game Masters, Roleplaying, Cut Scenes

Modulated by: Interruptible Actions, Ultra-Powerful Events, Turn Taking

Potentially conflicting with:

Strategic Knowledge

Knowledge based on processing information about the game elements, rules, possible actions, or evaluation functions of a game without regards to a specific game state.

Example: The knowledge of long sequences of combos in fighting games such as the *Tekken* or *Dead or Alive* series are *Strategic Knowledge* to players, even if they may not have the skill to successfully perform them.

Instantiates: Memorizing, Empowerment, Replayability, Trans-Game Information, Extra-Game Actions, Stimulated Planning, Game Mastery

Modulates: Shared Resources, Betting, Illusion of Influence, Self-Facilitated Games, Smooth Learning Curves, Replayability, Guard, Race

Instantiated by: Game World Navigation, Meta Games, Spectators, Hierarchy of Goals, Tournaments, Moveable Tiles, Power-Ups, Dice, Strategic Locations, Ultra-Powerful Events, Shrinking Game World, Transfer of Control, Rewards, Penalties, Area Control, Delayed Effects, Randomness, Tradeoffs, Combos, Achilles' Heels, Resources, Experimenting, Cut Scenes, Trans-Game Information, Game State Overview, Predefined Goals, Extra-Game Information, Selectable Sets of Goals

Modulated by: Damage, Storytelling, Predictable Consequences, Public Information, Perfect Information, Unknown Goals

Potentially conflicting with: Luck

Strategic Locations

Strategic Locations are areas in the Game World that give an advantage to the players controlling them.

Example: Controlling locations that produce valuable resources, such as the cities in *Civilization*, provide the player a long-term strategic advantage.

Instantiates: Strategic Knowledge, Gain Information, Memorizing, Gain Ownership, Area Control

Modulates: Combat, Player Balance, Game World, Reconnaissance, Traverse, Guard, Gain Ownership, Exploration, Spawning, Player Constructed Worlds

Instantiated by: Pick-Ups, Goal Points, Tiles, Safe Havens, Resource Generators, Controllers, Spawn Points, Resource Locations, Power-Ups

Modulated by: Safe Havens, Outstanding Features, Ownership

Potentially conflicting with:

Supporting Goals

Completion of a Supporting Goal helps the player achieve the other, sometimes specific, goals of the game.

Example: Real-time strategy games, such as *Age of Empires*, have many *Supporting Goals*, from identifying and collecting resources to building defenses and scouting enemy territory, all of which support the goal of defeating the opponents. Much of the skill in those games lies in balancing the struggle towards the different *Supporting Goals* so that the chances of succeeding with the overarching goal are maximized given the particular circumstances of a specific game instance.

Instantiates: Progress Indicators

Modulates: Hierarchy of Goals, Player Balance, Risk/Reward, Tradeoffs, Right Level of Difficulty, Varied Gameplay

Instantiated by: Pick-Ups, Achilles' Heels, Gain Information, Race, Improved Abilities, Optional Goals, New Abilities, Area Control

Modulated by: Resources

Potentially conflicting with: Conflict, Red Herrings

Surprises

Events and consequences that are unexpected by players and disturb their attention.

Example: One of the primary rewards for being a game master in roleplaying games is to be surprised by what the players do with the *Game World* and the story one has constructed.

Instantiates: Attention Swapping, Immersion, Spatial Immersion, Emotional Immersion, Irreversible Actions, Disruption of Focused Attention

Modulates: Dexterity-Based Actions, Exploration

Instantiated by: Deadly Traps, Game Masters, Construction, Limited Foresight, Role Reversal, Betrayal, Easter Eggs, Leaps of Faith, Unknown Goals, Imperfect Information, Dedicated Game Facilitators, Narrative Structures, Rewards, Never Ending Stories, Cut Scenes, Orthogonal Unit Differentiation, Exploration

Modulated by: Damage, Predictable Consequences, Levels, Red Herrings, Identification, Limited Planning Ability

Potentially conflicting with: Predictable Consequences, Illusion of Influence, Replayability, Game State Overview, Self-Facilitated Games, Anticipation, Hovering Closures, God's Finger, Traces, Outstanding Features, Save-Load Cycles, Cognitive Immersion, Immersion, Aim & Shoot, Trans-Game Information, Perceived Chance to Succeed

Survive

The goal of trying to avoid being killed by actions of other players and events in the game.

Example: The players are, sooner or later, going to have all their ships destroyed in *Space Invaders* or *Asteroids*, but surviving allows the players to keep on playing to gain enough points to reach a high score position.

Instantiates: Continuous Goals, Preventing Goals

Modulates: Eliminate

Instantiated by: Last Man Standing

Modulated by: Units, Conceal, Avatars, Player Elimination, Lives

Potentially conflicting with:

Symmetric Goals

The players have goals with the same definition, for example, to be the first one to reach a certain area or amount of points, solve a problem, find an item, or overcome the opponent.

Example: A typical example of a *Symmetric Goal* is to surround the highest number of empty spaces in Japanese versions of *Go*.

Instantiates:

Modulates: Conflict, Competition

Instantiated by: Last Man Standing, Overcome, Mutual Goals, King of the Hill, Race

Modulated by: Interferable Goals

Potentially conflicting with: Unknown Goals, Asymmetric Goals

Symmetric Information

All players have the same information about the game state, or part of the game state, available to them

Example: In the tile-laying game *Carcassonne*, all players have the same amount of information: the configuration of placed tiles and where players have placed their tiles. No players know the order in which the remaining tile will come into play.

Instantiates: Stimulated Planning

Modulates: Conflict, Bidding, Trading, Analysis Paralysis, Public Information, Negotiation, Bluffing, Predefined Goals

Instantiated by: Perfect Information

Modulated by: Interferable Goals, Perfect Information

Potentially conflicting with: Bluffing

Symmetric Resource Distribution

The resources are distributed symmetrically and evenly among the players, that is, the players have similar access and ownership rights to the resources.

Example: the players have the same amount of money and no other possessions at the start of the game of *Monopoly*.

Instantiates: Symmetry

Modulates: Trading, Player Balance, Ownership, Resources

Instantiated by: Shared Resources, Player-Decided Distribution of Rewards & Penalties

Modulated by:

Potentially conflicting with: Asymmetric Resource Distribution, Varied Gameplay, Trading

Symmetry

Symmetrical relations exist between players regarding the goals, resources, and actions they can perform.

Example: The placement of initial settlements in *Settlers of Catan* is symmetrical in a fashion: the player who is first to place the first settlement is the last to place the second settlement while the player who is last to place the first settlement is the first to place the second settlement, and thereby gets to place two settlements in a row.

Instantiates: Team Balance, Outstanding Features, Hovering Closures, Player Balance, Consistent Reality Logic

Modulates: Game Mastery

Instantiated by: Symmetric Resource Distribution, Paper-Rock-Scissors

Modulated by: Configuration, Orthogonal Unit Differentiation

Potentially conflicting with: Asymmetric Abilities, Handicaps, Asymmetric Resource Distribution, Orthogonal Unit Differentiation

Synchronous Games

Games in which the players' game and play sessions must overlap in time.

Example: In *Monopoly*, the players start their game session when the game instance is started, and their play sessions usually also coincide in such way that the players are playing the game together from start to finish. It is not unusual for individual players to end the game at different times, however, dropping out of gameplay as they lose. Some games offer opportunities for players who have already lost to continue participating and influence the play as a non-player.

Instantiates: Downtime

Modulates: Social Interaction

Instantiated by: Self-Facilitated Games, Multiplayer Games

Modulated by: Tick-Based Games, Turn-Based Games, Real-Time Games, Communication Channels, Dedicated Game Facilitators, Turn Taking

Potentially conflicting with:

Team Balance

Teams have equal chances of succeeding with actions in a game or winning a game.

Example: Changing sides after half-time in *Soccer* can be seen as a way to achieve balance between the teams by minimizing the influence of variations of the field or the sun.

Instantiates: Social Statuses, Perceived Chance to Succeed

Modulates: Competence Areas, Collaborative Actions, Privileged Abilities, Team Play

Instantiated by: Symmetry, Player Balance, Balancing Effects, Handicaps

Modulated by: Team Development, Player Killing, Spawning, Orthogonal Unit Differentiation

Potentially conflicting with: Competence Areas, Player Decided Results, Empowerment, Team Development, Privileged Abilities

Team Development

The efficiency of the team is improved either intentionally or unintentionally.

Example: many teams and groups in roleplaying games try to maximize the efficiency of the team by selecting characters with complementary skills and by planning how the skills and abilities of the characters are improved over time.

Instantiates: Meta Games

Modulates: Team Play, Roleplaying, Team Balance

Instantiated by: Planned Character Development, Investments, Improved Abilities, New Abilities

Modulated by: Competence Areas, Resource Management, Privileged Abilities, Extra-Game Actions, Social Organizations, Skills, Asymmetric Abilities, Dynamic Alliances

Potentially conflicting with: Team Balance

Team Elimination

The elimination of the whole team in team-oriented games is an end condition and the evaluation function.

Example: in *Anarchy Online* and other MMORPGs the team fails in achieving a mission goal if the team members are killed during the mission.

Instantiates: Shared Penalties

Modulates: Team Play

Instantiated by: Collection, Player Elimination, Player Killing

Modulated by: Mutual Goals, Spawning

Potentially conflicting with:

Team Play

Players in a group or a team coordinate their actions, abilities, and roles in order to reach a common goal.

Example: Members of teams in roleplaying games usually have different kinds of abilities, and the teams form around players whose abilities complement each other. For example, the classic fantasy roleplaying group consists of a wizard who can cast attack spells, a priest who can heal and cast protective spells, a thief who can open locks and detect traps, and a couple of fighters who can handle the actual combat with the monsters. This kind of *Team Play* is also very widespread in current MMORPGs.

Instantiates: Competence Areas, Constructive Play, Cooperation, Social Interaction, Player-Decided Distribution of Rewards & Penalties

Modulates: Shared Resources, Multiplayer Games, King of the Hill

Instantiated by: Asymmetric Abilities, Units, Social Organizations, Mutual Goals, Area Control

Modulated by: Individual Penalties, Collaborative Actions, Penalties, Shared Penalties, Planned Character Development, Team Balance, Empowerment, Team Development, Dynamic Alliances, Illusion of Influence, New Abilities, Privileged Abilities, Shared Rewards, Roleplaying, Player Killing, Orthogonal Unit Differentiation, Individual Rewards, Handles, Team Elimination, Cooperation

Potentially conflicting with:

Tension

The feeling of caring about the outcome of actions or events in a game without having full control over them.

Example: The dark and claustrophobic environments in the *Doom* games easily cause *Tension* as players guide their *Avatars* through rooms and corridors, expecting monsters to appear.

Instantiates: Emotional Immersion

Modulates:

Instantiated by: Attention Swapping, Early Elimination, Damage, Deadly Traps, Continuous Goals, Aim & Shoot, Conflict, Shared Resources, Extended Actions, Leaps of Faith, Penalties, Movement Limitations, Competition, Limited Set of Actions, No-Ops, Consumers, Tournaments, Overcome, Social Dilemmas, Balancing Effects, Stealth, Rewards, Enemies, Betrayal, Tradeoffs, Lives, Game Masters, Player Defined Goals, Evade, Turn Taking, Risk/Reward, Uncommitted Alliances, Narrative Structures, Paper-Rock-Scissors, Boss Monsters, Player-Decided Distribution of Rewards & Penalties, King of the Hill, Delayed Reciprocity, Ownership, Uncertainty of Information, Randomness, The Show Must Go On, Delayed Effects, Shrinking Game World, Luck, Betting, Right Level of Difficulty, Tiebreakers, Downtime, Experimenting, Combat, Perceived Chance to Succeed, Player Elimination, Bluffing

Modulated by: Time Limits, Status Indicators, Near Miss Indicators, Red Herrings, Cooperation, Quick Games, Identification, Player Killing, Progress Indicators, Game Pauses, Clues, Geometric Rewards for Investments, The Show Must Go On, Traces, Save-Load Cycles, Anticipation

Potentially conflicting with: Perceivable Margins, Downtime, Perfect Information, Replayability, Turn Taking, Reversability

The Show Must Go On

The game state can change without any player actions.

Example: In real-time strategy games, there is always something happening in the *Game World*, and the players have to switch their attention constantly from one place to another to keep in pace with the game.

Instantiates: Time Limits, Rhythm-Based Actions, Resources, Maneuvering, Tension, Hovering Closures, Limited Planning Ability

Modulates: Attention Swapping, Aim & Shoot, Real-Time Games, No-Ops, Tension

Instantiated by: Real-Time Games, Moveable Tiles, Ultra-Powerful Events, Dedicated Game Facilitators, Shrinking Game World

Modulated by:

Potentially conflicting with: Turn Taking, Game Pauses

Third-Person Views

Players are shown the game world with a focus on a game element under the players' control

Example: *Pac-Man* is shown from above in the game with the same name, giving players the possibility to see what is behind walls in the maze.

Instantiates: Spatial Immersion, Focus Loci

Modulates: Aim & Shoot, Fog of War, Game World, Maneuvering, Game State Overview, Dexterity-Based Actions, Public Information

Instantiated by: Avatars, Units

Modulated by: Fog of War

Potentially conflicting with: God Views

Tick-Based Games

The game time progresses according to real time, but in discrete steps.

Example: the combat system in *Final Fantasy VII* is basically a hybrid between tick-based and real-time where the player and the enemies have certain time slots for deciding their actions, which are carried out when the time slot ends.

Instantiates: No-Ops

Modulates: Asynchronous Games, Synchronous Games, Downtime

Instantiated by: Time Limits, Turn Taking, Dedicated Game Facilitators

Modulated by: Real-Time Games, Turn-Based Games, Budgeted Action Points, Game Pauses

Potentially conflicting with:

Tiebreakers

A rule that distinguishes outcomes in a game from each other so that what would otherwise be a tie in the results can be treated as having quantitative differences.

Example: the board game *Puerto Rico* is won by having the highest amount of victory points. In the case of two or more players having the same amount, the winner is determined by who of those players have the greatest amounts of money and goods.

Instantiates: Conflict, Excluding Goals, Tension

Modulates: High Score Lists, Conflict, Competition, Tournaments, Overcome, Multiplayer Games, Race, Score

Instantiated by: Perceivable Margins, Tournaments

Modulated by: Resources, Resource Management

Potentially conflicting with: Shared Penalties, Negotiation, Shared Rewards, Uncommitted Alliances, Tied Results

Tied Results

Two results can be regarded as even in the game and the effects of the results can be divided.

Example: many fighting games such as the *Tekken* series or racing games such as *Monkey Race 2* in *Super Monkey Ball 2* do allow the fights and races to end as draws although this rarely happens.

Instantiates: Shared Penalties, Player-Decided Distribution of Rewards & Penalties, Uncommitted Alliances, Shared Rewards

Modulates: Time Limits, Multiplayer Games, Race

Instantiated by: High Score Lists, Tournaments, Agents, Score, Non-Renewable Resources

Modulated by: Social Dilemmas, Player-Decided Distribution of Rewards & Penalties, Betrayal

Potentially conflicting with: Perceivable Margins, Excluding Goals, Tiebreakers

Tile-Laying

The placing of tiles as actions in the game.

Example: the board game *The Settlers of Catan* starts with a randomize play area consisting of hexagonal tiles every game session to ensure that game play varies.

Instantiates: Reconfigurable Game World, Exploration, Card Hands, Player Constructed Worlds, Randomness, Varied Gameplay, Construction

Modulates: Tiles, Fog of War, Game World, Imperfect Information

Instantiated by: Drawing Stacks

Modulated by:

Potentially conflicting with:

Tiles

Tiles are areas within the game world that partition it into separate parts, usually filling the whole game world.

Example: *NetHack* uses *Tiles* to represent corridors, walls, dungeon, and cavern floors and so on. These *Tiles* are used to generate an almost limitless number of different dungeons.

Instantiates: Strategic Locations, Game World, Reconfigurable Game World

Modulates: Shrinking Game World

Instantiated by:

Modulated by: Moveable Tiles, Drawing Stacks, Tile-Laying, Discard Piles, Card Hands

Potentially conflicting with:

Time Limits

The Time Limit for completing an action, reaching a goal, staying in a certain mode of play, or finishing a game session has a limit based on either game time or real time.

Example: some level based games have *Time Limits* for completing the level. If the players are unable to complete the level within the *Time Limit* they have to restart the level from the beginning or face other negative consequences.

Instantiates: Resources, Tradeoffs, Limited Planning Ability, Right Level of Difficulty, Limited Resources, Tick-Based Games

Modulates: Early Elimination, Continuous Goals, Evade, Race, King of the Hill, Ephemeral Goals, Preventing Goals, New Abilities, Improved Abilities, Decreased Abilities, Ability Losses, Game Pauses, Turn Taking, Puzzle Solving, Empowerment, Tension, Anticipation, Hovering Closures, Resources, Arithmetic Rewards for Investments, Quick Games, Analysis Paralysis, Trading, Renewable Resources

Instantiated by: Deadly Traps, Shared Resources, Power-Ups, Delayed Effects, The Show Must Go On

Modulated by: Goal Indicators, Progress Indicators, Status Indicators, Tied Results

Potentially conflicting with: Safe Havens, Downtime, Self-Facilitated Games, Game Pauses

Timing

The effect on gameplay that actions have to be performed at certain points in game time to be performed at all or that the direct effect of actions varies greatly depending on when they are performed.

Example: Fighting games such as *Soul Calibur* or the *Tekken* series put heavy emphasis on *Timing*: it is required to successfully attack opponents before they parry and it is also required to parry incoming attacks. Further, special actions are triggered by the right *Timing* of what would otherwise be normal actions.

Instantiates: Rhythm-Based Actions, Game Mastery

Modulates: Turn-Based Games, Overcome, Real-Time Games, Configuration

Instantiated by: Aim & Shoot, Combat, Collaborative Actions, Stimulated Planning, Capture, Moveable Tiles, Geometric Rewards for Investments, Deadly Traps, Obstacles, Delayed Effects, Combos

Modulated by: No-Ops, Privileged Abilities, Stimulated Planning

Potentially conflicting with:

Tools

Tools are game elements that enable the players' Avatars and Units to perform actions otherwise unavailable to them.

Example: Roleplaying games make most intense use of *Tools*, often in the form of weapons and armors to affect combat outcomes and gadgets (e. g., keys, ladders, mirrors) to overcome problems. Massively Multiplayer Online Roleplaying Games have expanded this further by requiring the use of various *Tools* in the item production chains such games sometimes support.

Instantiates: Gain Competence, Illusion of Influence, Rewards, Extra-Game Consequences, Perceived Chance to Succeed, New Abilities, Collecting, Improved Abilities

Modulates: Avatars, Achilles' Heels, Units, Characters, Gain Ownership, Spawning, Ownership, Skills, Consistent Reality Logic, Controllers

Instantiated by:

Modulated by: Aim & Shoot, Converters, Helpers, Privileged Abilities, Transfer of Control

Potentially conflicting with:

Tournaments

Tournaments consist of the playing of a series of game instances where the outcome of each instances affects the outcome of the whole tournament.

Example: The world cup in *Soccer* is a *Tournament* using elimination of the other teams for determining the final winner. The teams are eliminated from the *Tournament* on the basis of losing single game instances to other teams, and the last team left in play is the winner.

Instantiates: Hierarchy of Goals, Meta Games, Conflict, Perceivable Margins, Strategic Knowledge, Trans-Game Information, Closure Points, Overcome, Tension, Tiebreakers, Replayability, Illusionary Rewards, Multiplayer Games, Tied Results

Modulates: Combat, Asymmetric Abilities, Betting, Player Balance, Social Organizations, Game Mastery

Instantiated by: Last Man Standing, Overcome

Modulated by: Spectators, Self-Facilitated Games, Tiebreakers, Quick Games, Score

Potentially conflicting with:

Traces

Traces are game elements, or distinct parts of the game world, that are created when game elements are moved through the environment. Traces can also show what has happened before the gameplay began.

Example: A common example of traces is footsteps left by avatars in first-person shooters when the avatars have passed through water or acid. Other examples include skid tracks in racing games or blood drops in adventure games.

Instantiates: Illusionary Rewards, Outstanding Features, Puzzle Solving, Clues

Modulates: Game World Navigation, Pick-Ups, Exploration, Achilles' Heels, Red Herrings, Reconnaissance, Traverse, Privileged Movement, Tension, Resource Locations, Right Level of Difficulty

Instantiated by:

Modulated by:

Potentially conflicting with: Surprises, Red Herrings

Tradeoffs

That players must choose between several different options and compare values against each other.

Example: All roleplaying games where players can distribute values for statistics or skills require players to do tradeoffs, such as whether they want characters that are strong and dumb or weak and smart, clumsy but charming or agile but unpleasant, and so on.

Instantiates: Strategic Knowledge, Stimulated Planning, Balancing Effects, Game Mastery, Analysis Paralysis, Tension

Modulates: Cognitive Immersion, Stealth, Committed Goals, Perceived Chance to Succeed, Right Level of Difficulty

Instantiated by: Combat, Bidding, Time Limits, Consumers, Converters, Producers, Resources, Budgeted Action Points, Selectable Sets of Goals, Renewable Resources, Freedom of Choice, Resource Management, Risk/Reward, Player-Decided Distribution of Rewards & Penalties, Area Control, Delayed Effects

Modulated by: Attention Swapping, Cameras, Producers, Limited Resources, Supporting Goals

Potentially conflicting with:

Trading

Players exchange some kind of Resource, be it information, actions, or game elements, between each other or the game system.

Example: *Settlers of Catan*, a famous German board game, has a specific trading phase where the player can trade the five basic resources of the game---lumber, wool, grain, bricks, and ore---with other players by announcing the resources he needs and what he is willing to give in return. The other players are also free to make their proposals and counter proposals to the player so the trade also has a bargaining phase. In this game, only the player whose turn it is can initiate trades, which means that the other players may not trade among themselves. There is also an option to trade with the game system, but then the trade usually has a worse return rate than in trades with other players and there is no possibility for bargaining. The trades in the game are open; that is, the other players see what kinds of trades are performed. The design of resource production in the games often make players have unequal production rates between the different resource types, but the progress---building roads, settlements, and cities and buying development cards---requires that the *Resources* are somewhat balanced.

Instantiates: Competition, Freedom of Choice, Area Control, Transfer of Control, Social Interaction

Modulates: Optional Goals, Delayed Reciprocity, Gain Ownership, Cooperation, Resources, Ownership, Power-Ups

Instantiated by: Collaborative Actions, Resource Generators, Construction

Modulated by: Direct Information, Delivery, Indirect Information, Time Limits, Negotiation, Asymmetric Resource Distribution, Symmetric Resource Distribution, Betrayal, Interruptible Actions, Bluffing, Symmetric Information, Geometric Rewards for Investments, Rewards

Potentially conflicting with: Symmetric Resource Distribution

Trans-Game Information

Information that is passed from one game session to another game session.

Example: the results of individual games in a tournament are past to the tournament itself. Sometimes only who won the game is used to affect the tournamentbut often also the actual result in recorded as well to function as tiebreakers.

Instantiates: Social Statuses, Strategic Knowledge, Irreversible Actions, Game Mastery, Extra-Game Consequences

Modulates: Handicaps, Character Development, Never Ending Stories, Narrative Structures, Public Information

Instantiated by: High Score Lists, Strategic Knowledge, Tournaments, Score, Ghosts, Easter Eggs, Replayability, Handles, Save-Load Cycles, Meta Games, Games within Games

Modulated by: Storytelling, Public Information, Imperfect Information

Potentially conflicting with: Surprises, Replayability, Unknown Goals

Transfer of Control

When the influence over a game element is passed from one player to another.

Example: The special ability of *Priests* in *Age of Empires* is to transfer the control of enemy units to the player controlling the *Priests*.

Instantiates: Conflict, Strategic Knowledge, Collaborative Actions, Emotional Immersion, Closed Economies, Varied Gameplay, Closure Points, Collecting, Privileged Abilities, New Abilities, Area Control, Ownership

Modulates: Units, Resources, Non-Renewable Resources, Tools

Instantiated by: Bidding, Trading, Capture, Overcome, Betting, Negotiation, Gain Ownership, Collection

Modulated by: Irreversible Actions, Non-Renewable Resources, Diminishing Returns, Geometric Rewards for Investments, Balancing Effects, Renewable Resources

Potentially conflicting with:

Traverse

The goal to try and move a game element from one position in the game to another.

Example: Platform games such as those in the *Mario* or *Super Monkey Ball* seriescan be defined as having *Traverse* goals of going from the beginning of a level to the end.

Instantiates: Goal Points, Progress Indicators, Movement, Contact, Area Control

Modulates: Aim & Shoot, Selectable Sets of Goals, Narrative Structures, Stealth

Instantiated by: Save Points, Delivery, Exploration, Reconnaissance, Inaccessible Areas

Modulated by: Herd, Safe Havens, Chargers, Evade, Privileged Movement, Strategic Locations, Obstacles, Traces, Enemies, Indirect Control

Potentially conflicting with:

Turn Taking

Letting one player do some action or actions before letting the other players act.

Example: *Spin the Bottle* uses randomness to determine whose turn it is next and players may play a complete game session without having a turn.

Instantiates: Spectators, Stimulated Planning, Tick-Based Games, Self-Facilitated Games, Anticipation, Interruptible Actions, Downtime, Tension, Social Interaction, Analysis Paralysis, Game State Overview, Hovering Closures, Turn-Based Games

Modulates: Bidding, Capture, Unknown Goals, Synchronous Games, Negotiation, Game Mastery, Storytelling

Instantiated by: Dedicated Game Facilitators, Game Masters

Modulated by: Time Limits, Resources, Quick Games, Limited Resources, Ultra-Powerful Events, Balancing Effects, Score, Bidding

Potentially conflicting with: Real-Time Games, Tension, The Show Must Go On

Turn-Based Games

The players take turns to make their actions to change the game state, and the progress of game time is not tied to the real time.

Example: *Laser Squad Nemesis* and the *Combat Mission* serie offer the players modes for hot-seating, switching the player whose turn it is, and sending the turn information via e-mail to the other player.

Instantiates: Role Reversal, Downtime

Modulates: Combat, Tick-Based Games, Synchronous Games, Asynchronous Games, Asymmetric Abilities, Capture

Instantiated by: Turn Taking

Modulated by: Self-Facilitated Games, No-Ops, Budgeted Action Points, Timing, Puzzle Solving, Real-Time Games, Dedicated Game Facilitators, Game Pauses

Potentially conflicting with: Maneuvering, Real-Time Games

Ultra-Powerful Events

Events that cannot be affected by player actions.

Example: Games that have cut-scenes between levels or after completing goals are examples of games with *Ultra-Powerful Events*, since players cannot affect the game while the cut-scenes are being shown.

Instantiates: Spectators, Predictable Consequences, Strategic Knowledge, Stimulated Planning, Anticipation, Rhythm-Based Actions, Downtime, Narrative Structures, The Show Must Go On, Ability Losses, Delayed Effects, Hovering Closures

Modulates: Consistent Reality Logic, Illusion of Influence, Turn Taking, Storytelling, Maneuvering

Instantiated by: Deadly Traps, Extended Actions, Controllers, Cut Scenes, Shrinking Game World, Movement, Game Masters, Dedicated Game Facilitators

Modulated by: Irreversible Actions, Reversability

Potentially conflicting with: Self-Facilitated Games, Freedom of Choice, Perceived Chance to Succeed

Uncertainty of Information

The information available to the player may have different levels of reliability

Example: In *Diplomacy*, the current game state is known to all players, but as the player actions are revealed simultaneously, there is a level of uncertainty as to what the other players are going to do during the game round and ultimately what is going to be the outcome. This seems to be in conflict with the previous statement that information patterns only govern the current game state, but as the players in *Diplomacy* have to write down their orders before the resolution phase, they then become part of the whole game state.

Instantiates: Secret Alliances, Secret Resources, Tension, Limited Planning Ability

Modulates: Predictable Consequences, Unknown Goals, Delayed Effects, Outcome Indicators

Instantiated by: Indirect Information, Exploration, Communication Channels, Imperfect Information, Gain Information

Modulated by: Randomness

Potentially conflicting with: Conflict, Direct Information, Status Indicators, Interferable Goals, Perfect Information, Goal Indicators, Progress Indicators, Outcome Indicators

Uncommitted Alliances

The players have a possibility to start and end alliances without direct in-game investments or risking penalties.

Example: in *Diplomacy* basically all agreements between players are *Uncommitted Alliances* as there are no in-game penalties involved in case players leave the alliances, and the dynamics of the game play are built on this premise. If players agree not to attack each other during one game year and one of the players attacks anyway, the penalty of this breach of agreement depends on the other players as the game rules do not inflict any such penalties.

Instantiates: Leaps of Faith, Risk/Reward, Tension

Modulates: Alliances, Balancing Effects, Social Interaction

Instantiated by: Predictable Consequences, Tied Results, Betrayal, Shared Rewards, Delayed Reciprocity, Hovering Closures, Player-Decided Distribution of Rewards & Penalties

Modulated by: Penalties, Dynamic Alliances, Negotiation

Potentially conflicting with: Social Organizations, Tiebreakers

Units

Units are groups of game elements under the player's control that let the player perform actions to influence the Game World.

Example: In the board game *Space Hulk*, one of the players controls an essentially unlimited amount of *Units*, called genestealers, which are replenished endlessly. The opposing player has a preset number of *Units*, called space marines, which are not replenished once lost.

Instantiates: Attention Swapping, Stimulated Planning, Resource Management, Varied Gameplay, Orthogonal Unit Differentiation, Enemies, Paper-Rock-Scissors, Third-Person Views, Team Play, Investments, Resources, Focus Loci

Modulates: Combat, Survive, Consistent Reality Logic, Extended Actions, Ability Losses, Evade

Instantiated by:

Modulated by: Damage, Deadly Traps, Producer-Consumer, Penalties, Limited Set of Actions, Cameras, God's Finger, Game State Overview, Non-Renewable Resources, Privileged Abilities, Eliminate, Tools, Parallel Lives, Producers, New Abilities, Transfer of Control, Decreased Abilities, Ownership, Renewable Resources

Potentially conflicting with: Avatars

Unknown Goals

Goals initially, or currently, unknown to players.

Example: Most adventure games start by providing the players with an overarching goal which motivates the players to complete the game. However, the different subgoals that have to be completed before the main goal is completed are usually unknown, as knowing these would ruin many of the surprises in the narrative.

Instantiates: Surprises, Gain Information

Modulates: Hierarchy of Goals, Strategic Knowledge, Committed Goals, Competition, Ephemeral Goals, Rewards, Planned Character Development

Instantiated by: Conceal, Dynamic Goal Characteristics, Dedicated Game Facilitators, Imperfect Information

Modulated by: Selectable Sets of Goals, Clues, Uncertainty of Information, Asymmetric Information, Narrative Structures, Downtime, Turn Taking

Potentially conflicting with: Trans-Game Information, Predefined Goals, Replayability, Symmetric Goals

Varied Gameplay

The game provides variety in gameplay, either within a single play session or between different play sessions.

Example: *Deus Ex* was designed to have several ways of completing each level. This allows players to choose between trying to sneak past opposition, openly challenge it, or try to overcome it in indirect ways.

Instantiates: Replayability, Right Level of Difficulty

Modulates: Competence Areas, Game Mastery, Narrative Structures

Instantiated by: Reconfigurable Game World, Achilles' Heels, Character Development, Asymmetric Abilities, Units, Converters, Resources, Budgeted Action Points, Transfer of Control, Selectable Sets of Goals, Dynamic Alliances, Incompatible Goals, Polyathlons, Levels, Freedom of Choice, Ability Losses, Social Organizations, Games within Games, New Abilities, Asymmetric Resource Distribution, Skills, Orthogonal Unit Differentiation, Tile-Laying, Asymmetric Goals, Higher-Level Closures as Gameplay Progresses, Producer-Consumer

Modulated by: Red Herrings, Diminishing Returns, Levels, Characters, Non-Renewable Resources, Supporting Goals

Potentially conflicting with: Quick Games, Sensory-Motoric Immersion, Camping, Symmetric Resource Distribution, No-Ops