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Players of Digital Games

Players: Game Researcher's Perspective

- **Juul** [Juul 2010; in (1)]:
 - **hardcore** player
 - **casual** player

- **Salen and Zimmerman** [Salen and Zimmerman, 2004 in (1)]: different **lusory attitudes**:
 - **Standard Player**: follows rules
 - **Dedicated Player**: follows rules but unusual strategies
 - **Unsportsmanlike Player**: follows rules but violates spirit of lusory attitude
 - **Cheating Player**: violates rules to win
 - **Spoil-Sport Player**: violates rules, doesn't care at all

Players: Game Designer's Perspective

- game **researchers**: **ex post** / empirical perspective ↔
game **designers**: **ex-ante** perspective

- Jesse **Schell** [Schell 2010; in (1)]: important: **age, gender**:
 - Infant\Toddlers(0-3),
 - Preschooler (4-6),
 - Kids (7-9),
 - Preteen or "Tween" (10-13),
 - Teen (13-18),
 - Young Adult(18-24),
 - Twenties and Thirties (25-35),
 - Thirties and Forties (35-50),
 - Fifties and Up (50+).

common: memories of childhood play

distinguished by **mental development**

distinguished by **family status**

Players: Game Designer's Perspective

- **Chapman** [Chapman et al, 2008 in (1)]:
 - **Personas**:
- **Radoff** [Radoff 2011; in (1)]:
 - **Player Personas**: fictional representants of equivalence classes of players in terms of **personality, attitudes, attributes**

Players: Statistics

- studies:** Entertainment Software Association [ESA, 2011; in (1)], [Dobson, 2006 in (1)]:
- 72 % of US households **play digital games**
 - **av age: 37**
 - **42 % female; females:** 71 % of **casual** players
 - **preferences:**
 - casual games (47 %),
 - action, sports, strategy, role-playing (21 %)
 - massive multi-player games (11 %)
 - > 50 % of players play on **mobile devices**
 - 65 % play **together** with other gamers in person
 - adult gamers have spent **12 years** of playing video games



Components of Digital Games

Components: Game Researcher's Perspective

- **Salen and Zimmerman** [Salen and Zimmerman, 2004 in (1)]:
 - general **characteristics** of game **rules**:
 - Rules **limit** player actions
 - Rules are **explicit** and unambiguous
 - Rules are **shared** by all players
 - Rules are **fixed**
 - Rules are **binding**
 - Rules are **repeatable**
 - **three types** of rules:
 - **Constitutive** Rules: core logic; in code; handle internal events
 - **Operational** Rules: external events (e.g. user i/o: audio, video)
 - **Implicit** Rules: also depend on external context (e.g. platform)

Components: Game Researcher's Perspective

Juul [Juul, 2005 in (1)]: **rules: chain of dependencies:**

- „rules specify limitations and affordances“
- rules map: player's actions $A \rightarrow$ game states S : state machine
- state machine: graph or tree: ‚game tree‘, ‚game graph‘
- utility function on states \rightarrow player challenges \rightarrow skills
 - \rightarrow enjoyable experience

Components: Game Researcher's Perspective

● **Hunicke** [Hunicke et al, 2004 in (1)]: games: “systems that build behavior via interaction”

● [Hunicke et al, 2004 in (1)]: **MDA** framework (**mechanics, dynamics, aesthetics**):

- **Mechanics** “are the various actions, behaviors and control mechanisms afforded to the player within a game context. Together with the game's content (levels, assets, and so on) the mechanics support overall gameplay dynamics.”
- **Dynamics** “run-time behavior of the mechanics acting on player inputs and each others' outputs over time.”
- **Aesthetics** facilitate “the desirable emotional responses evoked in the play, when she [the player] interacts with the game system.”

Components: Game Researcher's Perspective

Järvinen [Järvinen, 2007 in (1)]: **nine game elements:**

- **Systemic** elements:
 - **Components**: resources for play
 - **Environment**: space for play
- **Compound** elements:
 - **ruleset** (including utility function, goal-set)
 - game **mechanics**: player's action patterns toward goals
 - **theme**: subject matter of game
 - **interface**: e.g. UI
 - **information**: players need to know, coupled with game states
- **Behavioral** elements:
 - **players**
 - ‚outside‘ **contexts**: e.g. spatiotemporal environment of game-playing

Components: Game Researcher's Perspective

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Components: Game Researcher's Perspective

● **Järvinen** [Järvinen, 2008 in (1)]:

- **social interaction** of players:
 - **inside game:** vsocial context accessible
 - **outside („off-“)game:** social context inaccessible
- game elements: **ownership attribute:**
 - Element-of-**self**
 - Element-of-**other**
 - Element-of-**system**

Components: Game Researcher's Perspective

● **Järvinen** [Järvinen, 2008 in (1)]:

○ **game mechanics:** „A game mechanic makes a particular set of rules available to the player in the form of prescribed *casual relations between game elements and their consequence to particular game state(s)*”

● **Sicart** [Sicard, 2008; in (1)]:

○ **game mechanics:** „methods invoked by agents, designed for interaction with the game world”

Components: Game Researcher's Perspective

● **Sicart** [Sicard, 2008; in (1)]: **game mechanics:** types:

- **Core Mechanics:** “the *game mechanics (repeatedly) used by agents to achieve a systemically reward end-game state.*”
 - **Primary Mechanics:** “core mechanics that can be *directly applied to solving challenges that lead to the desired end state.*”
 - **Secondary Mechanics:** “core mechanics that *ease the player's interaction with the game towards the end state.*”
- **Compound Mechanics:** “set of related game mechanics that function together within one delimited agent interaction mode.”
- **Context Mechanics:** “mechanics triggered depending on the context of the player presence in the game world.” (→ different notion of context!)

Components: Game Researcher's Perspective

● **Dormans** [Dormans, 2012; in (1)]:

- **game play**: „emergent property of the game as defined by its rules“
- **game components**:
 - game mechanics:
 - „a set of [specific] rules governing the behavior of a single game element“
 - umbrella term covering
 - » **internal economy**: „is constituted by the production, flow and consumption of game resources“, e.g. points, items
 - » **game physics**: „implementation of the physical laws that govern motion and force within the game“
 - **core mechanics**: „the essential play activity players perform again and again in a game“ (originally by [Salen and Zimmerman, 2004; in (1)])

Components: Game Researcher's Perspective

● **Dormans** [Dormans, 2012; in (1)]:

- **game components (contd.)**:
 - level: „particular spatial and/or logistical structure [...] dictates what challenges players encounter. Typically, a level contains a set of positioned game elements and/or scripts to control special events and players' progress through the game“
- **Dormans: Mechinations** framework (formal language for game mechanics, very very roughly comparable to UML)

Components: Game Designer's Perspective

● **Schell** [Schell, 2010; in (1)]: “**elemental tetrad**”

- Mechanics,
 - Story,
 - Aesthetics,
 - Technology
- [Schell, 2010; in (1)]: **Mechanics**:
- **Space**: “places [...] in a game, and how these places are related to one another”
 - **Objects** (tokens, ‘props’, etc.), **attributes, and states**
 - **Player's Actions**: operative actions, resultant (more abstract) actions (strategies)
 - **Rules**
 - **Skill**: physical, mental, and social skills; difference btw. real skills and virtual skills that only exist in the game.
 - **Chance**

Components: Game Designer's Perspective

● **Parlett** [Parlett, 2005; in (1)] in [Schell, 2010; in (1)]: **typology of rules** (cp. also Salen and Zimmermann (S&Z)):

- **Operational Rules**: explicit rules of the game; “a set of operational procedures you apply to the gaming equipment in order to play the game”; more descriptions than prescriptions
- **Foundational Rules**: implicit rules; describe the underlying formal (mathematical) structure; synonymous with S&Z's constitutive rules.
- **Behavioural Rules**: higher order implicit rules; a subset of S&Z's implicit rules; example ‘good sportsmanship’.
- **Written Rules**: often absent; rather taught via e.g. an interactive tutorial.

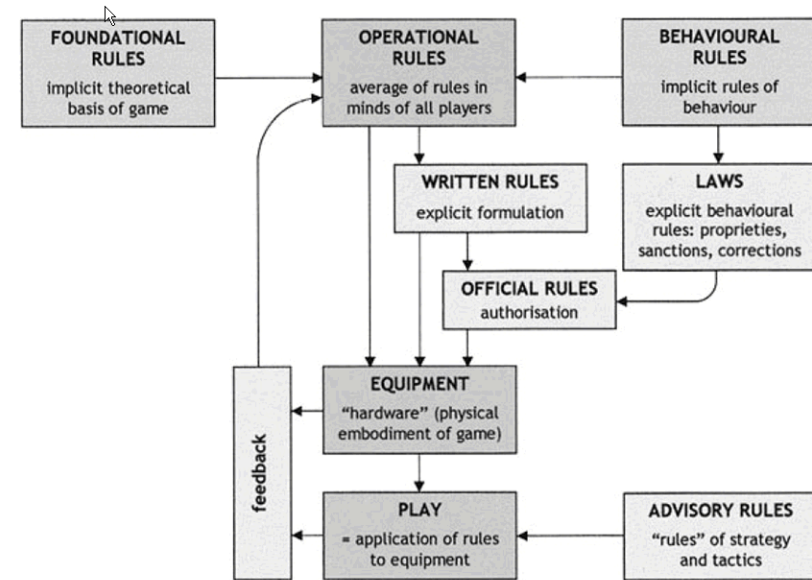


Components: Game Designer's Perspective

Parlett [Parlett, 2005; in (1)] in [Schell, 2010; in (1)]: **typology of rules** (cp. also Salen and Zimmermann (S&Z)): (ctd.)

- **Laws: for serious play:** "explicit rules of behavior" only for "serious, competitive settings"; include e.g. sanctions
- **Official rules:** for serious play; == laws + written rules
- **Advisory rules:** "rules of strategy"; opt. shared btw. players (e.g. in MMOG)
- **Feedback** i.e. alterations to the operational rules by individual players; ~ "house rules" (e.g. w.r.t. difficulty levels)

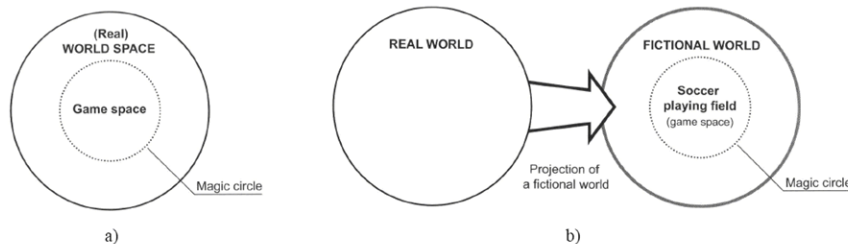
Components: Game Designer's Perspective



Parlett's Typology of Rules. Source: [Parlett, 2005; in (1)]

Components: Game Designer's Perspective

- Important component: **game spaces** (e.g. Pacman maze, stages, levels, places in WOW, Second Life etc.) (= "virtual worlds", "game worlds")
- **blurring of boundaries** (→ **magic circle**): real ↔ imaginary world: negotiated by players, determined by context → adds **social dimension**



Juu's Magic Circle (a) in the Real World and (b) in Fictional Worlds. Source: [Juu, 2005; in (1)]

Components: Game Researcher's Perspective

- **Klastrup** [Klastrup, 2003; in (1)]:
 - **virtual worlds: two dimensions:**
 - **Genre:** "gaming worlds, social worlds, educational worlds, commercial (or chat and entertainment) worlds, and art worlds.", **not strictly separated**
 - **Classification: axes:** size (small, medium, large), common sense (e.g. setting, interaction possibilities, degree of realism), or other general evaluation criteria
 - **virtual worlds: functions:**
 - **Interpretative framework:** → social meaning, meaning for game mechanics
 - **Representation:** props → atmosphere, paidea.
 - **Simulation:** → ludus; → action sequences in game space
 - Lived **story** in a social space: covers the "experience of time, history and community developed within the world"

Components: Game Designer's Perspective

- **Schell** [Schell, 2010; in (1)]: **three attributes** of game spaces / virtual worlds / game worlds:
 - discrete or continuous
 - certain **number of dimensions**, incl. 0 (e.g. guessing game)
 - boundaries
- [Schell, 2010; in (1)]: **Transmedia worlds**: *fantasy worlds that can be entered through many different media*



Meta-Types and Types of Digital Games

Meta-Types of Digital Games

- **Meta-types** of games:
 - Simulation
 - Social games
 - On-line games
 - Mobile games
 - Location-based games
- these are
 - overlapping
 - probably not complete



Meta-Types of Digital Games

Simulation

- **generally**: *"to simulate is to model a (source) system" (possibly non-real) "through a different system which maintains to somebody some of the behaviors of the original system" [Frasca, 2003b; in (1)].*
- closely related to **game mechanics**, **game physics**

Social Games

- requires **social interaction** (cooperative vs. competitive)
- social interaction: **inside / outside of game**
- generates / uses **social context**



Online Games

- require connectivity
- e.g. Web-based games

Mobile Games

- mobility → more, more interesting, more real-world **contexts**
- games that **incorporate context**, measured via sensors (e.g. in a smartphone) in a mobile scenario
- **forms of context** (overlapping): spatio-temporal, social, physical, medical, personal etc.
- games making use of **spatial context**: **location-based games**
- **important**: distinguish:
truly mobile == use mobile context ≠ only accessed via mobile UI

● Meta-types of games:

- Simulation
- Social games
- On-line games
- Mobile games
 - Location-based games

● these are

- overlapping
- probably not complete



● Types of games:

- Hardcore
- Casual
- Pervasive
- Serious

● these are

- not totally exclusive
- probably not complete



Hardcore Games

- **meta types**: simulation (primarily), on-line, social
- intensive player **immersion**
- **sub-types**:
 - ego-shooters,
 - MMOGs, MMORPGs, MUDs... (see [Klastrup, 2003, p. 57-91; in (1)])
 - vintage classic games
 - ...
- **often**:
 - realistic physics,
 - high end (often 3D) graphics,
 - detailed game worlds
 -

Casual Games

- Juul [Juul, 2010; in (1)]: **characteristics:**
 - **Instant play**, easy to learn
 - **Quick play**, do not require much time to play to get pleasure
 - **Common play**, address a vast majority of player types
- **meta-types:** online (primary), social (primary), mobile
- **constant development** e.g. via user feedback possible and good practice

Casual Games

- Juul [Juul, 2010; in (1)]: **five design principles:**
 - **Fiction:** almost all: “*fictions with positive valence*”.
 - **Usability:** are easy to use, friendly interfaces, “*presuppose little knowledge of game conventions*”
 - **Interruptibility:** allow players to “*play in short bursts*”
 - **Difficulty and punishment:** “*often become very difficult during the playing of a game*” but typically only have “*lenient punishments for failing*”.
 - **Juiciness:** “*excessive positive feedback for every successful action*”

Casual Games: varieties:

- **browser games**
 - Web applications
 - example: games by Zynga
- **social network games:**
 - played on social networking platforms
 - example: Farmville
- **downloadable casual games:**
 - specific distribution channel, often assoc. with brands
 - example: Moorhuhn
- **mimetic games:**
 - “*exergames*”, take game-play out of virtual game space to the player’s ‘real world’ space, mostly via ‘physical’ UIs
 - examples: Wii Sports, Guitar Hero, Kinect games

Pervasive Games

- [Montola et al, 2009; in (1)]: „*game that has one or more salient features that expand the contractual magic circle of play spatially, temporally, or socially*”
- [Montola et al., 2009, in (1)]. **other terms:** “*adaptronic games, alternate reality games, ambient games, appropriative games, augmented reality games, big games, brink games, context aware games, crossmedia games, geogames, hybrid games, immersive games, invasive games, location-based games, locative games, massive games, mixed reality games, mobile games, pervasive games, reality games, supergames, total games, transreality games etc.*”

Types of Digital Games

Pervasive Games

- [Kampmann Walther, 2005; in (1)]: „[...] *augmented and/or embedded game worlds [...] on the threshold between tangible and immaterial space*”
- [Kampmann Walther, 2005; in (1)]: „may further include adaptronics, wearable, mobile, or embedded software/hardware in order to facilitate a ‘*natural*’ environment for gameplay that ensures the explicitness of computational procedures in a post-screen setting
- related: **pervasive + ubiquitous computing**
- **meta-types**: mobile + location-based (primary), social (secondary)

Types of Digital Games

Pervasive Games: sub-types: [Magerkurth et al, 2005; in (1)]:

- **Smart toys**:
e.g. Ravensburger tiptoi
- **Affective gaming**:
integrate a player’s emotional state, measured via sensors
- **Augmented tabletop games**:
e.g. via tangible pawns
- **Location-aware games**:
e.g. Geocaching
- **Augmented reality games**:
e.g. via head-mounted displays, projected images on real-world surfaces, or hand-held devices.

Types of Digital Games

Serious Games

- **games with ‘useful’ side effects**: [Susi et al., 2007; in (1)]:
 - **education**: e-learning, edutainment, game-based learning, digital game-based learning (related, overlapping)
 - **training**: : e.g. military or financial simulations
 - **information**: political games, corporate games, and healthcare games (inform, create awareness)
- „**Games with a Purpose**” (GWAP):
 - more strictly oriented towards specific goal
 - closely related but not necessarily with game orientation: „human-based computation“, „crowdsourcing”
 - examples: Artigo (soft ontology / folksonomy generation), Captcha-solving
- **meta types**: social, simulation

Types of Digital Games

	Hardcore	Casual	Pervasive	Serious
Simulation				
On-line				
Social				
Mobile				
Location-based				