Types of Digital Games: Casual Games

**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*”

Types of Digital Games: Pervasive Games

**Pervasive Games**

- [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, supersgames, total games, transreality games etc.*”
**Pervasive Games: sub-types:** [Magerkurth et al., 2005; in (1)]:

- **Smart toys:**
  e.g. Tamagotchi-like toys, 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.

- general (pervasive) trend: Gamification

---

**Serious Games**

- **games with ‚useful’ side effects** for users: [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):**
  - side-effects not immediately useful for users
  - closely related but not necessarily with game orientation: „human-based computation“, „crowdsourcing“

- **examples:** Artigo (soft ontology / folksonomy generation), Captcha-solving

- **meta types:** social, simulation
 Serious Games

- **games with 'useful' side effects** for users: [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):
  - side-effects not immediately useful for users
  - closely related but **not** necessarily with game orientation: "human-based computation", "crowdsourcing"
  - **examples**: Artigo (soft ontology / folksonomy generation), Captcha-solving

- **meta types**: social, simulation

---

Serious Games

- **games with 'useful' side effects** for users: [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):
  - side-effects not immediately useful for users
  - 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

<table>
<thead>
<tr>
<th></th>
<th>Hardcore</th>
<th>Casual</th>
<th>Pervasive</th>
<th>Serious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location-based</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Genres of Digital Games

- extensive review of genres: [Järvinen, 2008; in (1)]: "Judological genre frameworks"
- example: [Rollings and Adams, 2003; in(1)], [Bates, 2004; in(1)] and [Novak, 2012; in(1)]:
  - {action games,
  - adventure games,
  - strategy games,
  - simulations,
  - role-playing games,
  - puzzles}

genres:

- critique:
  - not "timeless", formal criteria missing
  - tree-based classifications (taxonomies): too rigid (e.g. in terms of mixed genres), graph based (with more relations than sub-sumption (is-a) or meronymy (part-of)) required
  - mostly driven from existing games (extensional), not intensional
Genres of Digital Games

critique:
- not “timeless”, formal criteria missing
- tree-based classifications (taxonomies): too rigid (e.g. in terms of mixed genres), graph based (with more relations than sub-sumption (is-a) or meronymy (part-of)) required
- mostly driven from existing games (extensional), not intensional

Genres of Digital Games

- **better**: genre classifications based on game mechanics: “genre is defined by a shared collection of core mechanisms” [Costikyan, 2005; in (1)];
  - genres by game mechanics: similar to ludological genre frameworks;
  - genres = sets of game mechanics
  - additive: new mechanics can be added w.o. changing older parts
  - new genres easy: new combinations / sets
- **genre**: derived from single pioneer game and its mechanics and following similar games [Costikyan, 2005; in (1)]

Genres of Digital Games

[Järvinen, 2008; in (1)]: **Rapid analysis method (RAM)**: 40 types of game mechanics:
- accelerating / decelerating, aiming & shooting, allocating, arranging, attacking / defending, bidding, browsing, building, buying / selling, catching, choosing, composing, conquering, contracting, controlling, conversing, discarding, enclosing, expressing, herding, information-seeking, jumping, maneuvering, motion, moving, operating, performing, placing, point-to-point movement, powering, sequencing, sprinting / slowing, story-telling, submitting, substituting, taking, trading, transforming, up-grading / down-grading, voting
Genres of Digital Games

[Järvinen, 2008; in (1)]: Rapid analysis method (RAM): 40 types of game mechanics:

“accelerating / decelerating, aiming & shooting, allocating, arranging, attacking / defending, bidding, browsing, building, buying / selling, catching, choosing, composing, conquering, contracting, controlling, conversing, discarding, enclosing, expressing, herding, information-seeking, jumping, maneuvering, motion, moving, operating, performing, placing, point-to-point movement, powering, sequencing, sprinting / slowing, story-telling, submitting, substituting, taking, trading, transforming, up-grading / down-grading, voting”

Genres of Digital Games

examples:


attacking / defending, building (a combination of placing and arranging), conquering, information-seeking, operating, point-to-point movement

Summary

• “A game is to somebody an engaging activity in which players believe to have active participation and where they agree on a system of rules that assigns social status to their quantified performance. The activity constrains players’ immediate future to a set of probable scenarios, all of which they are willing to tolerate” [Frasca, 2007; in (1)]

• four types of games: {hardcore, casual, pervasive, serious},
  - described as vectors $\in [0,1]^d$ of meta-types
    - {simulation, on-line, social, mobile, location-based}

• genres of games: either described via
  - ludological genre frameworks or
  - as subsets of a large number of / a taxonomy of game-mechanics
“You can learn more about a person in an hour of play than in a year of conversation” [Plato].

“In our play we reveal what kind of people we are” [Ovid].

“The opposite of play isn’t work - it’s depression” [Sutton-Smith, 1997; in (1)]

“positive emotions we get from games are already spilling over into real.” [McGonigal, 2011a; in (1)] → societal challenges of the 21st century

numerous researchers (see (1)): playing addresses emotions (mostly positive ones) directly: fun, eustress, frustration.

also: games support motivation & flow experiences

most players develop into socializers over time [Radoff, 2011; in (1)]

[Yee, 2006 (various); in (1)]: statistics based: three motivational components for MMOG player type definition:

- **Achievement**: desire for advancement, mastery of game mechanics, love of competition
- **Social**: socializing, building relationship, teamwork.
- **Immersion**: urge for discovery, love of role-playing, need for customization, motive of escapism.

---

**Motivation**

- **Intrinsic** (pleasure in means/ activity itself) vs. **Extrinsic** (goal ↔ utility)

- [Maslow, 1943 in (1)] → [Schell, 2010 in (1)]:
  - most achievements of games:
    - Self Esteem level
    - Belonging Love level (↔ social games)

Maslow’s basic need hierarchy [Maslow, 1943; in (1)]
Socio-Psychological Domain: Motivation

**Motivation: types**

- [Reiss, 2004; in (1)]: 16 motives: power, curiosity, independence, status, social contact, vengeance, honor, idealism, physical exercise, romance, family, order, eating, acceptance, tranquility, saving
- [Radoff, 2011; in (1)]: social → more powerful motivators: acceptance or status

![Diagram: Radoff's Player Motivations](image)

---

Socio-Psychological Domain: Motivation

**Motivation: types**

- [Reiss, 2004; in (1)]: 16 motives: power, curiosity, independence, status, social contact, vengeance, honor, idealism, physical exercise, romance, family, order, eating, acceptance, tranquility, saving
- [Radoff, 2011; in (1)]: social → more powerful motivators: acceptance or status

![Diagram: Radoff's Player Motivations](image)
Motivation: rewards

- **four characteristics of reward**: [Wang and Sun, 2011; in (1)][1]
  - social value,
  - effect on game-play,
  - suitability for collection and review,
  - time required to earn and/or receive the reward

- **utilization of rewards**: [Wang and Sun, 2011; in (1)][1]
  - Advancement, (game progress)
  - Review, (sense of accomplishment)
  - Sociality, (interaction)
  - Cooperate / Compete, (share, hoard)

---

Emotions

- **Affective Computing** [Picard, 1995; in (1)], Social Signal Processing [Vinciarelli 2011], Emotion Synthesis (Robotics)

- **Ekman’s six key emotions** [Ekman, 1972; in(1)]:
  - frustration (anger), fear, surprise, sadness, amusement (happiness)

- **Plutchik’s wheel of emotions** [Plutchik, 2011; in (1)]: eight basic emotions:
  - joy, trust, fear, surprise, sadness, disgust, anger, anticipation
Emotions

- Affective Computing [Picard, 1995; in (1)], Social Signal Processing [Vinciarelli 2011], Emotion Synthesis (Robotics)

- Ekman’s six key emotions [Ekman, 1972; in(1)]:
  - frustration (anger), fear, surprise, sadness, amusement (happiness)

- Plutchik’s wheel of emotions [Plutchik, 2011; in (1)]: eight basic emotions:
  - joy, trust, fear, surprise, sadness, disgust, anger, anticipation

---

Plutchik’s Wheel of Emotion. Source: [Plutchik, 2012; in (1)]
Emotions

- **detection** via **Social Signal Processing** [Vinciarelli 2011]: galvanic skin response (GSR), cardiovascular measures, and electromyography (EMG) [Mandryk et al., 2006; in (1)], computer vision, audio based methods (Schuller, TUM)

- [Lazzaro, 2007; in (1)]: five functions of player emotion in digital games:
  - support enjoyment
  - focus attention
  - help in decision making
  - affect player’s performance
  - support learning

Forms of Engagement: Flow

- **characteristics of Flow** [Nakamura and Csikszentmihalyi, 2002; in (1)]:
  - Intense and focused **concentration**
  - merging of action and awareness.
  - **loss** of reflective self-consciousness
  - sense of **total control** of one’s actions
  - distortion of temporal experience
  - experience of the activity as **intrinsically rewarding**

- **conditions for Flow** [Nakamura and Csikszentmihalyi, 2002; in (1)]:
  - sense of engaging challenges at appropriate level (neither overmatching nor underutilizing) to skills & capacities.
  - clear **proximal goals**
  - immediate feedback
Forms of Engagement: Flow

- characteristics of Flow [Nakamura and Csikszentmihalyi, 2002; in (1)]:
  - Intense and focused concentration
  - merging of action and awareness.
  - loss of reflective self-consciousness
  - sense of total control of one’s actions
  - distortion of temporal experience
  - experience of the activity as intrinsically rewarding

- conditions for Flow [Nakamura and Csikszentmihalyi, 2002; in (1)]:
  - sense of engaging challenges at appropriate level (neither overmatching nor underutilizing) to skills & capacities.
  - clear proximal goals
  - immediate feedback

Different Models of Flow: (a) Original Three Channel Flow Model, (b) Four Channel Flow Model and (c) Eight Channel Flow Model. Sources: a) and c) [Nakamura and Csikszentmihalyi, 2002], b) [Novak et al., 1997]. (all in (1))

Fun

[LeBlanc, 1999; in (1)]: eight kinds of fun (→ part of MDA framework ('Aesthetics') [Hunicke et al., 2004; in (1)):

- Sensation: game as sense-pleasure
- Fantasy: game as make-believe
- Narrative: game as drama
- Challenge: game as obstacle course
- Fellowship: game as social framework
- Discovery: game as uncharted territory
- Expression: game as self-discovery
- Submission: game as pastime