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### Types of Digital Games

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*adaptated from (1)*
Genres of Digital Games

- extensive review of genres: [Järvinen, 2008; in (1)]: "ludological genre frameworks"
- genre ↔ intended game play
- Caillouts: \{ludus, paida\} × \{agôn, alea, mimicry, illinx\}: not ideal for digital games
- [Crawford, 1984]: \{skill-and-action games, strategy games\}
- more modern: [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 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

- 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 subsumption (is-a) or meronymy) required
  - mostly driven from existing games (extensional), not intensional

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:**

"Command and Conquer" (1995) and "StarCraft II" (2010): classic real-time strategy games:
- 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 $\in [0,1]^4$ 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

Narrative Structures

- we had: core of classification framework: type $\times$ genre

- Juul stresses: \{Games of Emergence, Games of Progression\} $\leftrightarrow$ narrative structure $\rightarrow$ narrative structure is our first descriptive aspect of games

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Juul stresses: (Games of Emergence, Games of Progression) ↔ narrative structure → narrative structure is our first descriptive aspect of games

narrative structure: more fine grained classification:

- classic Games of Emergence:
  example: Tetris

- Games of Emergence with sequential play:
  - Some games frame emergent play with story at start and end of game: give different levels narrative frame: example: Angry Birds (2011)

- Games of Progression with emergent play:
  examples: Grand Theft Auto (2001-2012): open game world, sequential list of challenges

- classic Games of Progression:
  example: Far Cry (2010)
**Socio-Psychological Domain**

- “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

**Socio-Psychological Domain: Players**

- [Bartle, 1996; in (1)] [Bartle, 2009; in (1)]: player types: (socio-psy. view):

  - 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.

Bartle’s Player Types: (a) Original Player Interests Graph and (b) 3D Player Types Graph. Source: [Bartle, 2009; in (1)]
Socio-Psychological Domain: Players

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Socio-Psychological Domain: Motivation

Motivation

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

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

Maslov’s basic need hierarchy [Maslov, 1943; in (1)]

Socio-Psychological Domain: Players

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

Radoff’s Player Motivations. [Radoff, 2011; in (1)]

Socio-Psychological Domain: Players

- [Bartle, 1996; in (1)] [Bartle, 2009; in (1)]: Player types (socio-psy. view):

Bartle’s Player Types: (a) Original Player Interests Graph and (b) 3D Player Types Graph. Source: [Bartle, 2009; in (1)]
Motivation: rewards

- also important rewards: [Wang & Sun, 2011; in (1)]: “provide social meaning within and outside of games”

- forms of rewards:
  - “score systems,
  - experience point reward systems,
  - item granting system rewards,
  - resources, achievement systems,
  - feedback messages,
  - plot animations and pictures,
  - unlocking mechanisms.”

Motivation: rewards

- four characteristics of reward: [Wang and Sun, 2011; in (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)]

- 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

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

- three levels of intensity of involvement (in digital games)
- Involvement [Lazzaro, 2007; in (1)]
- Presence: "the perceptual illusion of nonmediation" [Lombard & Ditton, 1997; in (1)]
- Immersion: "illusory reality" [Bartle, 2009; in (1)]
- Flow: "the holistic sensation that people feel when they act with total involvement" [Csikszentmihalyi, 1975; in (1)]

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 experiencee
  - 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

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

Social Play

key elements of social play [Isbister, 2009; in (1)]:

- Emotional contagion: [Hatfield et al., 1994; in (1)]: tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally. Also applicable to HCI and NPCs [Reeves and Nass, 1996 in (1)], [Nass et al, 1996 in (1)]

- Performance: humans perform better when they are watched by other humans [Cottrell, 1972; in (1)]. Also applicable in HCI [Rickenberg and Reeves, 2000; in (1)].

↔ Hawthorne effect [Landsberger, 1958; in (1)]: change in human behavior just by the fact that the people know that they are being observed.
Socio-Psychological Domain: Social Play

Social Play

key elements of social play [Isbister, 2009; in (1)] (contd.):

- Learning: Humans learn a lot from observing other humans performing a task [Bandura, 1977 in (1)].

- Relationship building: “Most game-play exists within exists within a social context” [Isbister, 2009, p. 51]: social play: → trust, friendship, power relationships, alliances, alternative social roles and identities

Communities and Social Networks in Digital Games

Studies of Communities and Social Networks in Digital Games

- long history of Virtual Community research (see e.g. [Klastrup, 2003; in (1)]
- example in games: MMO(RP)G (WoW etc.): cooperation in game may be necessary; models of emotion expression etc.
- Social Media, Social Games: → large datasets to study human social behavior
- in-game vs out-game social relations → related [Jakobsson and Taylor, 2003; in (1)]

Communities and Social Networks in Digital Games

Studies of Communities and Social Networks in Digital Games: research methods

[Warmelink and Siltonen, 2011; in (1)]: MMORPG research: four groups of methods:

- ethnography / participant observation: direct or indirect interviews, gathering of field data (e.g. chat logs), use of external sources such as manuals or player forums., video taping, focus groups (qualitative research)
- surveys in and outside of the virtual worlds; → qualitative or quantitative results.
- data analytics: data collection (crawling) and quantitative analysis (data mining, machine learning)
- social network analysis → later in lecture in detail; example gold farming detection [Keegan et al., 2010].


**Studies of Communities and Social Networks in Digital Games**

**Ecosystem of Player Communities**

Gaming sub-culture

Macro-level
The whole body of players, "player society"

Meso-level
Guild-like player communities

Micro-level
Small groups, teams, etc.

Interpersonal relationships

[Warmelink and Siitonen, 2011; in (1)]

**Descriptive Aspects:**

**Social Play**

**study topics:**

- **self-organisation** of players: short-term or long-time groups such as guilds [Nardi and Harris, 2006; in (1)], [Williams et al., 2006; in (1)], their context [Steinkuehler and Williams, 2006; in (1)].

  **sub-topics:**
  
  - social structuring: e.g. management, leadership, typology
  - rationales of social structures
  - culture and social norms
  - use of information and communication technology.

- **demographics and psychographics**

- **relationships between players and their avatars or characters** [Bainbridge, 2010; in (1)].

- **learning**: e.g. in serious games

**study topics (contd.):**

- **anti-social and misbehaving** conduct [Kirman et al., 2010; in (1)] [Achterbosch et al., 2008; in (1)].

- **prediction of social interaction** [Putze et al., 2010; in (1)]

- **communities that form around games** [Kirman, 2010; in (1)] [Wei et al., 2010; in (1)].

- **technological aspects** [Achterbosch et al., 2008; in (1)].

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**Communities and Social Networks in Digital Games**