Dutch cultural historian Johan Huizinga [Huizinga, 1939; in (1)]:

(higher form of) play is:

1. “a free activity
2. standing quite consciously outside “ordinary” life as being “not serious”, but at the same time absorbing the player intensely and utterly
3. is an activity connected with no material interest, and no profit can be gained by it.
4. proceeds within its own proper boundaries of time and space
5. according to fixed rules and in an orderly manner.
6. promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means.”

Writer and philosopher Roger Caillois [Caillois, 1961; in (1)]:

play is activity characterized as:

1. free as in a voluntary activity,
2. separate in time and space and defined in advance,
3. uncertain in course and results beforehand,
4. unproductive in a materialistic way,
5. governed by rules just applicable to the play, and
6. make-believe of a second reality or free unreality.
Ludologist Brian Sutton-Smith [Sutton Smith, 1997; in (1)]:

1. **Play as progress**: covers children’s play or the play of animals, explicitly excludes play of adults, understood primarily as development and not entertainment.

2. **Play as fate**: usually applied for all types of gambling games and other games of pure chance.

3. **Play as power**: representation of a conflict as in sports, athletics or contests in general.

4. **Play as identity**: traditional and community celebrations such as festivals or rituals: means to confirm, maintain or advance the power and identity of communities of participating players.

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**Concepts and Definitions for „Play“ and „Games“**

- **„Play“ vs. „Game“**
  - Social aspects in aforementioned general classification frameworks often implicitly contained:
    - formation of social groupings (Huizinga)
    - community identity (Sutton-Smith)
    - ....

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** Concepts and Definitions for „Play“ and „Games“**

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**Cncepts. and Defs: Vrtl. Play & Dig. Games: Academic Prspctv.**

- **„play“ ↔ „game“**:
  - [Salen and Zimmerman, 2004; in (1)]: definition of game:
    - A game is a system
    - in which players engage in
    - an artificial
    - conflict,
    - defined by rules,
    - that results in a quantifiable outcome.

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

- Dormans [Dormans, 2012; in (1)]: game play:
  - „emergent property“ of the game as defined by its rules”
digital games (games involving computers) as systems:

- as emergent systems
- as systems of uncertainty
- as information theory systems
- as systems of information (imperfect, perfect; information economy of a digital game: value created by information through its relationship to other pieces of information.
- as cybernetic systems: (input → state → output; feedback-loop; “agent”)
- as game theory systems
- as systems of conflict

Social aspects of digital games:

- [Salen and Zimmerman, 2004; in (1)]: “When games are framed as Social Play the relationships between elements in the game system are considered to be social relationships”
- [Salen and Zimmerman, 2004; in (1)]: “games are emergent social systems in which simple play behaviors and social interactions can result in incredibly complicated experiences of play”
- [Salen and Zimmerman, 2004; in (1)]: “In transformative social play players extend, transform, and manipulate existing social relationships through play itself”

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

**Juu** [Juu, 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

**Järvinnen** [Järvinnen, 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

**[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 Designer’s Persp.: Game Worlds

- 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

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

1. [Image 48x304 to 416x580]
2. [Image 426x304 to 794x580]
3. [Image 48x18 to 416x294]
4. [Image 426x18 to 794x294]
Components: Game Designer’s Persp.: Game Worlds

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Meta-Types of Digital Games

- **Meta-types** of games (that involve social interaction of some sort):
  - Simulation
  - Social games
  - Online games
    - Mobile games
      - Location-based games
  - these are
    - overlapping
    - probably not complete

---

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
Meta-TYPES of Digital Games

**Online Games**
- require connectivity
- e.g. Web-based (browser) games

**Mobile Games**
- mobility $\Rightarrow$ 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 $\Rightarrow$ use mobile context $\Rightarrow$ only accessed via mobile UI

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Types of Digital Games: Hardcore Games

**Hardcore Games**
- meta types: simulation (primarily), on-line, social
- intensive player immersion
- sub-types:
  - (ego-shooters), MMO 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
  - ....
Types of Digital Games: Casual Games

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

Types of Digital Games: Casual Games

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

Types of Digital Games: Pervasive 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

**Pervasive Games**

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- meta-types: mobile + location-based (primary), social (secondary)

Types of Digital Games: Serious Games & GWAPs

**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