**2.1 Games**

**2.1.1 Was ist ein Spiel?**

**Esposito, N. (2005). A Short and Simple Definition of What a Videogame Is. *Proceedings of DiGRA 2005 Conference: Changing Views – Worlds in Play*, 6. Retrieved from** [**http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:A+Short+and+Simple+Definition+of+What+a+Videogame+Is#0**](http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:A+Short+and+Simple+Definition+of+What+a+Videogame+Is#0)

Why should we define the term videogame? Because we have reasons to study videogames. What are these reasons? James Newman gives us an answer:

“While scholars identify a range of social, cultural, economic, political and technological factors that suggest the need for a (re)consideration of videogames by students of media, culture and technology, here, it is useful to briefly examine just three reasons why videogames demand to be treated seriously: the size of the videogames industry; the popularity of videogames; videogames as an example of human-computer interaction.” (Newman, J. Videogames. Routledge, 2004.)

Here is a possible definition:

**A videogame is a game which we play thanks to an audiovisual apparatus and which can be based on a story.**

This definition is short and simple, and I would like to demonstrate that it really defines the term videogame. I will show that this definition is based on well-known thoughts about game, play, interactivity, and narrative.

“However, even if it sounds obvious, videogames are, before anything else, games.” (Frasca, G. Videogames of the Oppressed. In Wardrip-Fruin, N. & Harrigan, P. (eds), First Person, MIT Press, 2004.)

GAME

Roger Caillois provides elements to define what a game is: a fictional, unpredictable, and unproductive activity with rules, with time and space limits, and without obligation. He also presents an approach for classifying games. He especially identifies two orientations. He calls it paida and ludus. We can understand it as freedom and constraints. (Caillois, R. Les jeux et les hommes. Gallimard, 1967.) Gonzalo Frasca (Esposito, N. (2005). A Short and Simple Definition of What a Videogame Is. *Proceedings of DiGRA 2005 Conference: Changing Views – Worlds in Play*, 6. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:A+Short+and+Simple+Definition+of+What+a+Videogame+Is#0), says it “describes the difference between play and game”. Effectively, some games without quantifiable outcome can be considered as toy-games (two famous examples: Sim City, 1989, and The Sims, 2002). I use words that Eric Zimmerman also use (quantifiable outcome), so it is time to discuss his definition of what a game is:

“A game is a voluntary interactive activity, in which one or more players follow rules that constrain their behavior, enacting an artificial conflict that ends in a quantifiable outcome.” [28]

PLAY

To introduce what playing a videogame is, I will quote Zimmerman again:

“Play is the free space of movement within a more rigid structure. Play exists both because of and also despite the more rigid structures of a system.” (Zimmerman, E. Narrative, Interactivity, Play, and Games. In Wardrip-Fruin, N. & Harrigan, P. (eds), First Person, MIT Press, 2004. http://www.electronicbookreview.com/v3/servlet/ebr?essay\_id=zimmerman&command=view\_essay)

**M. Flanagan, H. Niessenbaum, Values at Play in Digital Games (The MIT Press, Cambridge, MA/London, 2014)**

32 Interface-Centric Art Games 807 Mary Flanagan et al. write extensively about the values of games. To them all

games express and embody human values (Flanagan and Niessenbaum2014). They also observe that games not only carry certain values that designers embed into these systems (such as trust, fairness, etc.). They see games as powerful activation tools for new belief systems. In the philosophy of technology value systems are studied in detail as well, as political and societal consequences are shaped by technological innovations and products. The question of value systems is also interesting in respect to games that are

related to art. They allow artists to create settings where traditional notions of art and culture can be challenged and literally “played with.”

**F. Rötzer, Die Begegnung von Computerspiel und Wirklichkeit, in Kunstforum International, vol. 176 (Cologne, 2005), pp. 102–115**

In the 1990s some scholars such as Florian Rötzer even went as far as to call computer games the new art form of our times (Rötzer 2005)

**V. Flusser, Ins Universum der technischen Bilder (European Photography, Gttingen, 1987) V. Flusser, Gesellschaftsspiele, in Kunstlichespiele ed. by F. Ro ¨tzer, G. Hartwagner, S. Iglhaut**

**(Boer Verlag, Grafrath, 1993)**

The philosopher Vilem Flusser also called game theory the fundamental theory of the future, by pointing out that it is exactly the balance between rules and randomness that makes games so fascinating (Flusser 1987, 1993)

**Exer Games**

**Jacob, R., Girouard, A., Hirshfield, L., Horn, M., Shaer, O., Solovey, E. and Zigelbaum, J., Reality-based interaction: a framework for post-WIMP interfaces. in, (2008), ACM, 201-210.**

**19. Jacob, R., Girouard, A., Hirshfield, L., Horn, M., Shaer, O., Solovey, E. and Zigelbaum, J. Reality-based interaction: unifying the new generation of interaction styles CHI '07 extended abstracts on Human factors in computing systems, ACM Press, San Jose, CA, USA, 2007, 2465-2470.**

Four lenses (Jacob et. al):

Lens 1 - The responding body:

a view of the body "from the inside" or how the body's internal state changes over time as a result of the exertion - any activity from an outer layer necessitates a physiological response from the inner layer (heart rate increases, sweating, heavier breathing)

Lens 2 - The moving body:

focuses on participants' muscular repostioning of body parts relative to one another during the course of physical activity. It highlights movement characteristics such as intensity (movement can carry "weight"), continousness (movement exhibits preparatory and follow-through phases) and variety (the richness of human movement).

Lens 3 - The sensing body

describes how the body is sensing and experiencing the world. The physical and technological environment shapes the activity - playing in a stadium is not the same as playing in the park, nor is running in a park the same as running on a treadmill. The sensing body therefore aims to offer a contextual perspective, highlighting the body and its interactions with the world.

Lens 4 - The relating body

encompasses the ways in which bodies and people relate to each other through digital technology (co-player, opponents, audience, etc.).

**Sheinin, M., & Gutwin, C. (2014). Exertion in the small: Improving differentiation and expressiveness in sports games with physical controls. *32nd Annual ACM Conference on Human Factors in Computing Systems, CHI 2014*, 1845–1854. https://doi.org/10.1145/2556288.2557385**

Drawbacks for sports games with usual controllers:

- limited opportunity for expertise development: skill in the game can be increased, but not basic physical skills like running or throwing for real-world sports

- little differentiation between players in terms of basic actions (running, passing) --> real-world sports often revolve around individual differences

- artifical simplicity of controller actions means that there is no change in a player's physical capabilities over the course of a game (fatigue often decides games in real world sports)

Playing sports video games can improve performance in the real-world sport counterpart. Previous knowledge of a sport can affect success in playung sports video games.

The study provided four main findings:

1. physical controls allowed expertise development over time, particularly for precise passing in JellyPolo

2. Impulse-based control of movement led to clear individual differences in player abilities, in both TaFR (keyboard input) and JellyPolo (controller input)

3. Physical movement control also clearly led to changes in player capabilites over time, with fatigue becoming a major factor in both game outcomes and game strategy

4. Physical control appeared to add to the complexity and unpredictability of JellyPolo, leading to greater player expressiveness, enjoyment, and enthusiasm

**Serious Games**

**Educational Games**

**2.2 VR**

**2.2.3 Anwendungsfälle**

Chen, Y.-S., Han, P.-H., Hsiao, J.-C., Lee, K.-C., Hsieh, C.-E., Lu, K.-Y., … Hung, Y.-P. (2016). SoEs. *Proceedings of the 29th Annual Symposium on User Interface Software and Technology  - UIST ’16 Adjunct*, 71–72. <https://doi.org/10.1145/2984751.2985707>

Kategorie unklar (entweder VR oder exer games):

Yasumoto, M. (2015). Shadow Shooter, 1–2. https://doi.org/10.1145/2806173.2806193