



# **Playing as Experiencing and Making Sense of the World**

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# Overview

- Introduction: Why study play from cognitive science view?
- Defining play
- Enactive approach to cognition
- A closer look on different ludic activities
- Playing and making sense of the world




# Why play is an interesting phenomenon for cognitive scientists...

- Related to many of the „more serious“ topics in cognitive science (like reasoning, planning, memory, decision-making, consciousness, emotions, etc...)
- Many core disciplines of cognitive science have dealt or deal with it
- Relation to learning/knowledge creation/innovation
- Everybody has personal experience




# **What is play?**



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


(Huizinga, 1938)



„...an **enjoyable**, spontaneous activity that is carried out for its own sake with **no obvious immediate biological purpose**.

...

...a **state of mind** rather than a characteristic of certain types of activities. Thus, one can engage in almost any activity in a playful way, as long as one has a nonserious, **activity-oriented** (rather than goal-oriented) mental set.“ (M. Rod, 2007)



„*Play* is all motor activity performed postnatally that appears to be purposeless, in which motor patterns from other contexts may often be used in modified forms and altered temporal sequencing. If the activity is directed toward another living being it is called *social play*.“

(Bekoff & Byers, 1981)



# Important aspects of play

- Free activity
- Purposeless /  
no (immediate) goal
- Enjoyable / absorbing
- State of mind /  
activity-oriented
- Different context /  
outside ordinary life /  
within its own  
boundaries
- Safe space / trust
- Social
- Rules



# When we talk about play...

## 7 Rethorics

- play as progress (acquiring skills)
- fate play (gambling)
- power play (contests)
- identity play (symbolic interactions - e.g. rituals)
- imaginary play (pretence, fantasy)
- self play (flow, leisure)
- frivolity play (fool)

(„The Ambiguity of Play“ by B. Sutton-Smith, 1997)

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# **Purposeless...**

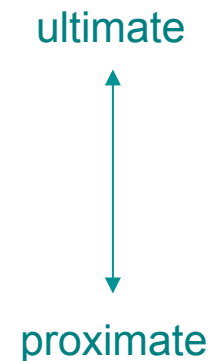
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# Purposeless...?

Striving for functional explanations

- Plato: learning skill, that are needed in work life
- K. Groos: instinct practice theory
- H. Spencer: surplus energy theory
- J. Panksepp: modulate arousal level



„It is worth considering that the main adaptive function of play may be the generation of positive emotional states. In such states animals may be more willing and more likely to behave in flexible and creative ways.“

(Panksepp, 1993)


▶ <http://graphics8.nytimes.com/packages/video/science/rat.mov>



# Exploring or Playing?

Exploration: novel stimulus raises arousal level; organism seeks to reduce arousal

Play: arousal level is low; organism seeks to increase level of stimulation



“Just such movements would seem to have influenced both earlier adultist definitions of play as purposeless, irrational activity, and later functionalist explanations of play as motor training and practice for adult behavior. In other words, the significance of play is either nil or tethered to the future.”

(M.Sheets-Johnstone, 2009, p.323)



**Playing as acting in the world in order  
to make sense of it...**

# Embodied cognition, situatedness, enactivism

## Embodiment/Situatedness

- cognition depends on experiences that come from having a body with various sensorimotor capacities
- individual sensorimotor capacities are embedded in a biological, psychological, and cultural context.

„sensory and motor processes, perception and action, are fundamentally inseparable in lived cognition.“ (Varela et al, 1991)



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## Enactive approach:

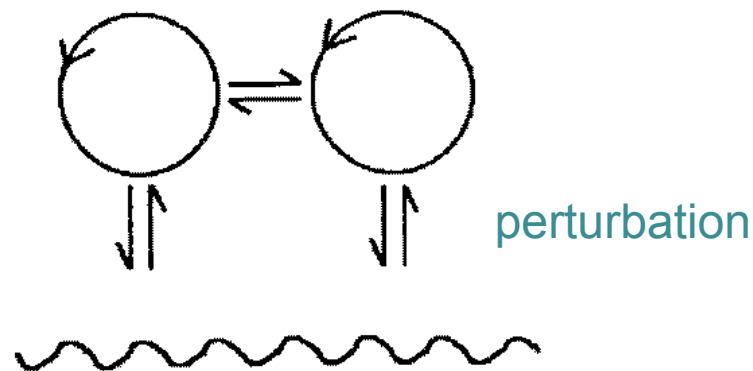
(1) perception consists in perceptually guided action and

(2) cognitive structures emerge from the recurrent sensorimotor patterns that enable action to be perceptually guided.

# Embodied cognition, situatedness, enactivism

Cognition is neither recognizing what is out there in the world nor projecting a pre-given inner world, but arises out of the interaction of an organism and its environment.

structural coupling of autopoietic system (Maturana & Varela, 1980)



Interaction with the world → generating meaning

# (En)acting playfully

- Cognitive systems as autonomous systems
- Not only respond to perturbations, but can actively regulate the exchange with the environment
- Play as a form of interacting with environment in an active, self-determined, not only responsive way

“Play is precisely *not* a problem requiring a solution. In fact, play is the breaking of this patterns; or rather its re-deployment into an **active construction of meaningful action** where no such sense-making is directly demanded from the environment or from definite internal needs. ”

(Di Paolo et al., 2010)

# Ludic activities

Spiel/Spielen (Hra/Hrat sa) but game/play

→ different words for different concepts?

Categories of ludic activities (Salen & Zimmerman, 2004)

- Game play (e.g. chess,..)
- Ludic activities (e.g. kitten playing with a yarn)
- Being playful (activities that are not typically play, but done with a playful state of mind)



# **A unifying definition?**

“Play is free movement within a more rigid structure.”

(Salen & Zimmerman, 2004)



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- (free) activity
- Structures/constraints



# Structures

- Game play
- Ludic activities
- Being playful

“To *play* with the ball is to play with all these structures, testing their limits and boundaries, finding ways of moving around and inside them.” (Salen&Zimmerman, 2004)

# Changing structures

„The role of play is not to work comfortably within its own structures but rather constantly to develop its structures through play. It is through play that man adapts to his changing world, that he constantly challenges and changes the rules and structures by which he lives.“

(J.S. Hans, *The Play of the World*, 1981)

→ Play within structures, but also in opposition to them

→ transformation



# Playing with structures, relations,...

Play of light - reflection from wristwatch

„From within the structures of physics of light, perception, and architecture emerges the unusual circumstance of a floating speck of light on the wall. The light playfully calls attention to itself, changing the relationship between your wristwatch and the architectural space. Your instinct is to play with the light, even for just a moment, to experience this new set of relationships between the movements of your body and the surface of the wall. The play of the light and your play with the play of the light, is only made possible by the ordinary sets of experiential relationships that this instance of play transforms.“

(Salen&Zimmerman, 2004)



# Playing with structures, relations, meaning,...

Detaching meaning from a situation

Vygotsky: play as wish fulfillment

- Motivated by inability to satisfy immediate needs - play as substitution for real satisfaction
- Pretence

# Playing with structures, relations, meaning,...

Detaching meaning from a situation

- A way of seeing things differently?
- Actively seeking perceptual and motor challenges?

„playing a game is the voluntary attempt to overcome unnecessary obstacles“ (B. Suits, 1978)

- Do we voluntarily build obstacles so we can indulge in creative ways of dealing with them, of playing?



## **Playing as enabling ...**

Learning

Innovation

Creativity


Making sense

Relations

Acting in the world

Having fun

Improvisation



„Wherever play is present, there are possibilities...“  
(Pat Kane, 2004)



**Thank you for your attention!**



**Thank you for your attention!**

...and remember....

**We don't stop playing because we grow old;  
we grow old because we stop playing.**