Virtual Population

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Agenda

- **Interestingness:** text, images… cooperation ~ media
- E.g. selfreference, memorability… hook
- **Virtual Population:** Autonomous Agents, Avatars
- **Matrix and Cube**
- **Ontology Example – CIDOC CRM**
- **MPEG 1, 2, 4, 7, 21**
- **Implications for Web Design**

The Interestingness of Images

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Abstract

We investigate human interest in photos. Based on our own and others' psychological experiments, we identify various cues for "interestingness", namely aesthetics, unusualness and general preferences. For the ranking of retrieved images, interestingness is more appropriate than cues proposed earlier. Interestingness is, for example, correlated with what people believe they will remember. This is opposed to actual memorability, which is uncorrelated to both of them. We introduce a set of features computationally capturing the three main aspects of visual interestingness that we propose and build an interestingness predictor from them. Its performance is shown on three datasets with varying context, reflecting diverse levels of prior knowledge of the viewers.

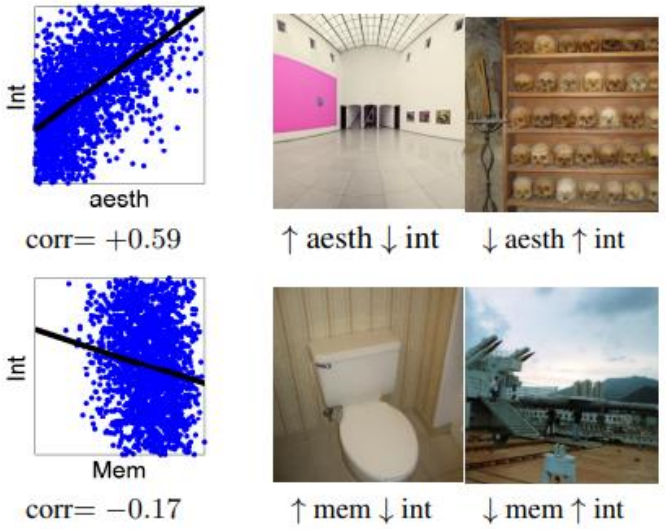


Figure 1: Interestingness compared to aesthetics and memorability.

21 in VI3DWs by Qvortrup

3 storytellers in novels (author, person, reflector) [Stenzel]

	Human user	Designer-in-avatar	User-in-avatar	Bot	Object	Virtual world
Human user	HU/HU					
Designer-in-avatar	D-in-A/HU	D-in-A/D-in-A				
User-in-avatar	U-in-A/HU	U-in-A/D-in-A	U-in-A/U-in-A			
Bot	Bot/HU	Bot/D-in-A	Bot/U-in-A	Bot/Bot		
Object	Ob/HU	Ob/D-in-A	Ob/U-in-A	Ob/Bot	Ob/Ob	
Virtual world	VW/HU	VW/D-in-A	VW/U-in-A	VW/Bot	VW/Ob	VW/VW

Figure 2.2 Matrix of 21 types of interaction in VI3DWs.

NLP: Neuroliguistic Programming

- **O'CONNOR, J. - SEYMOUR, J.: Introducing Neuro-Linguistic Programming, Lambent Books 1989, SK: Ivan KUPKA: Praktické aplikácie NLP,**
- **The types of human input channels: VAKOG and S**
- **video, audio, kinesthetic, ophtalactic and gustative - the first signal system**
- **symbolic - the second signal system**
- **Elicitation, anchor… e.g. question, guess, compare…**
- **Beyond SVAKOG: energy of errors, meaning of contradictions**

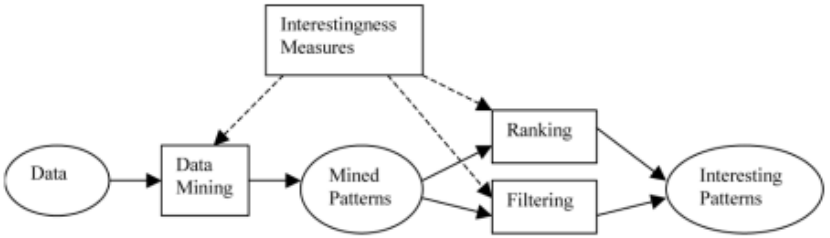
MPEG 1, 2, 4, 7, 21

- **MPEG 1, 2, 4 – transmission, compression, natural and synthetic data (video, audio, VRML)**
- **MPEG 7 – semantic search, draw or pipe**
- **MPEG 21 - interoperability within Digital Libraries and Semantic Web**

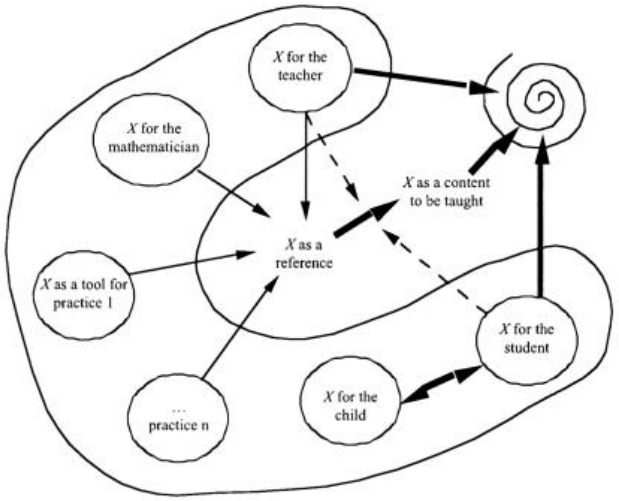
Augmented Reality a vyučovanie

výber z teórie a autorských postupov

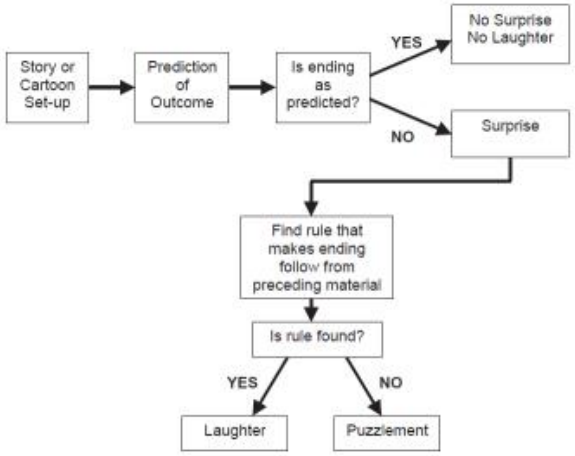
Dušan Kostrub
Zuzana Berger Haladová
Martina Bátorová
Andrej Ferko



Obr. 2.2: Predstavme si namiesto dát slová a namiesto vzoriek nápady a „merajme“ ich zaujímavosť v kontexte výkladu danej témy (Geng et al., 2006)



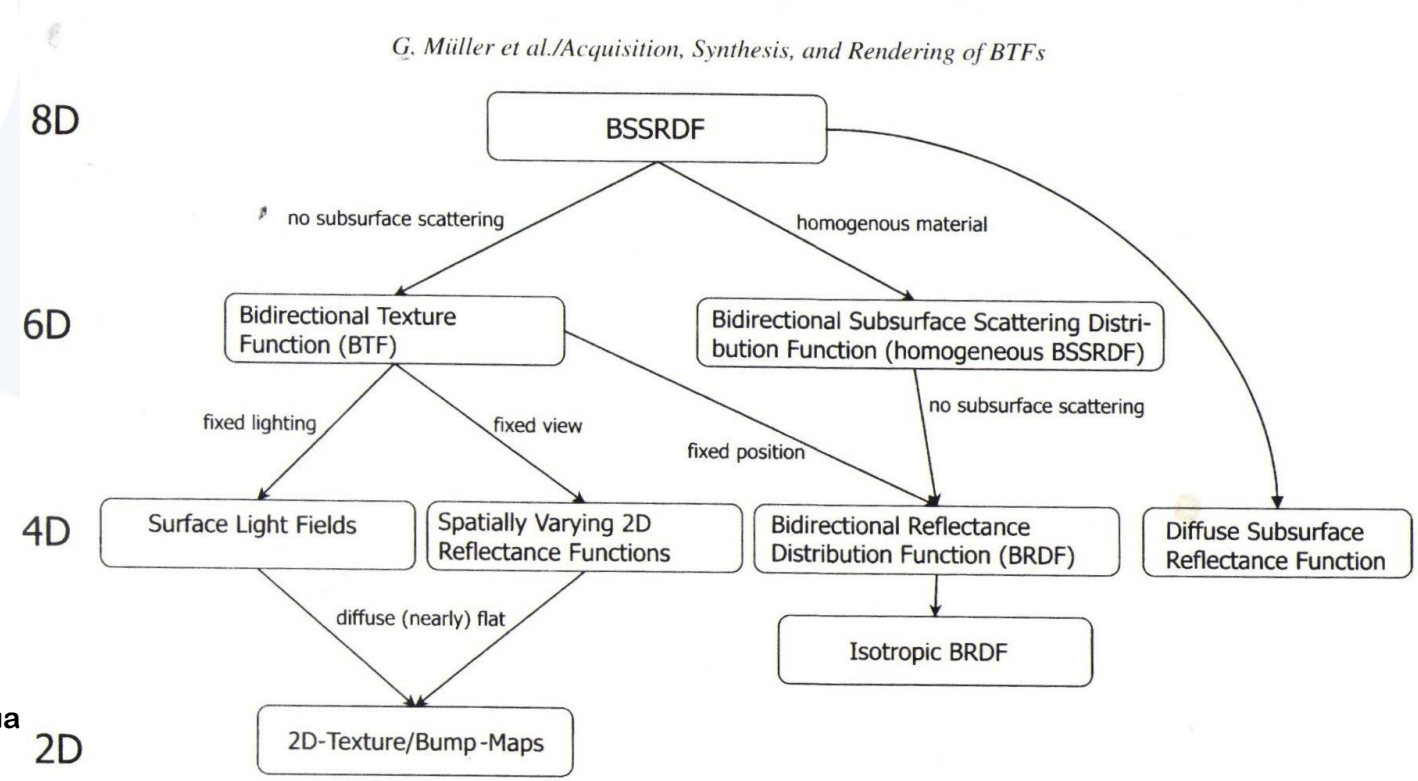
Obr. 2.3: Obrázok prevzatý z ***Meaning in Mathematics Education*** (Kilpatrick et al., 2005). Na kontext vyučovaného popri učiteľovi a žiakovi vplývajú aj detské a expertné porozumenie a praktické využitia daného obsahu, napr. pomocou Pytagorovej vety (a trojuholníka so stranami násobkov dĺžok 3, 4, 5) vedia šikovní murári zostrojiť pravý uhol („*X* as a tool for practice 1“)

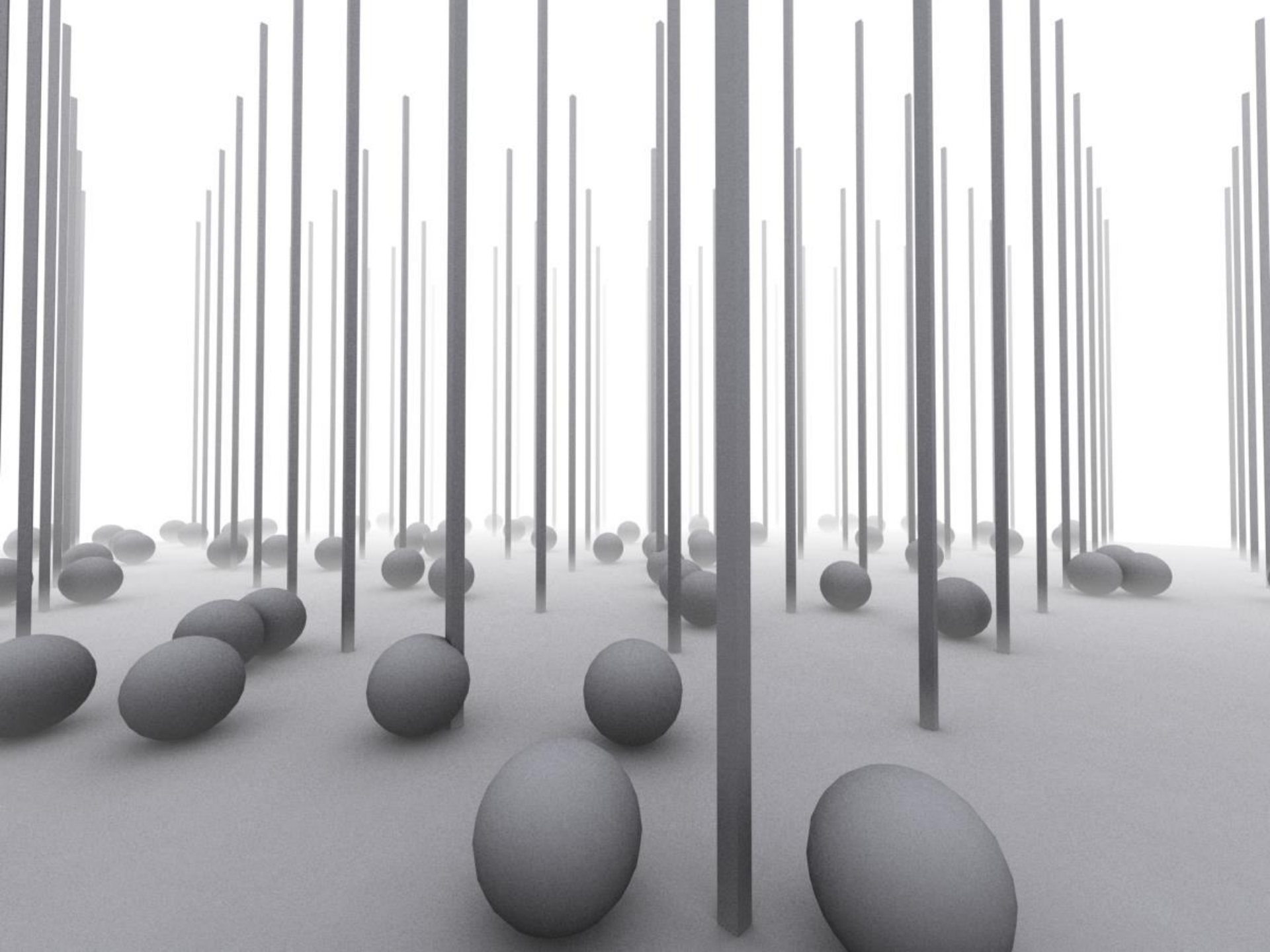


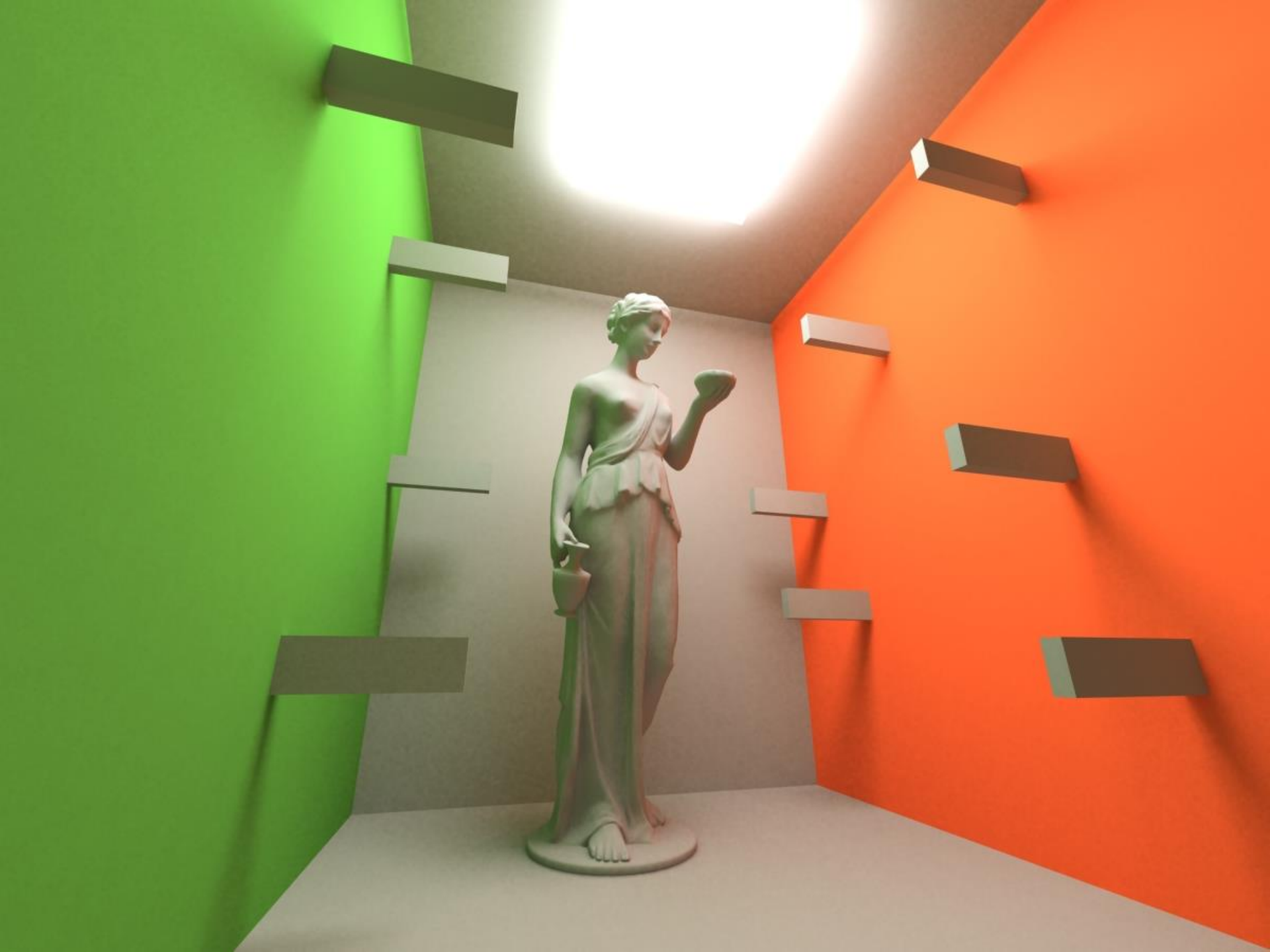
Obr. 2.5: Očakávanie s bisociáciou kombinuje upravená Sulsova schéma z knihy Rod A. Martin, ***Psychology of Humor***. Treba si však predstaviť dve modifikácie, na vstupe nemusí byť iba situácia v príbehu, ale v multimediálnom virtuálnom múzeu s reálnymi i rozširujúcimi komunikátmi a na výstupe v políčku Laughter môže nastať horeuvedených šesť možností AH, AHA, HAHA a ich chybné vyhodnotenie. Výstup v políčku Puzzlement môže obsahovať dve možnosti: HM a jeho chybné vyhodnotenie. V políčku No Surprise No Laughter ide napr. o typickú asociáciu (Suls tu nepoužíva Koestlerov pojem bisociácia)

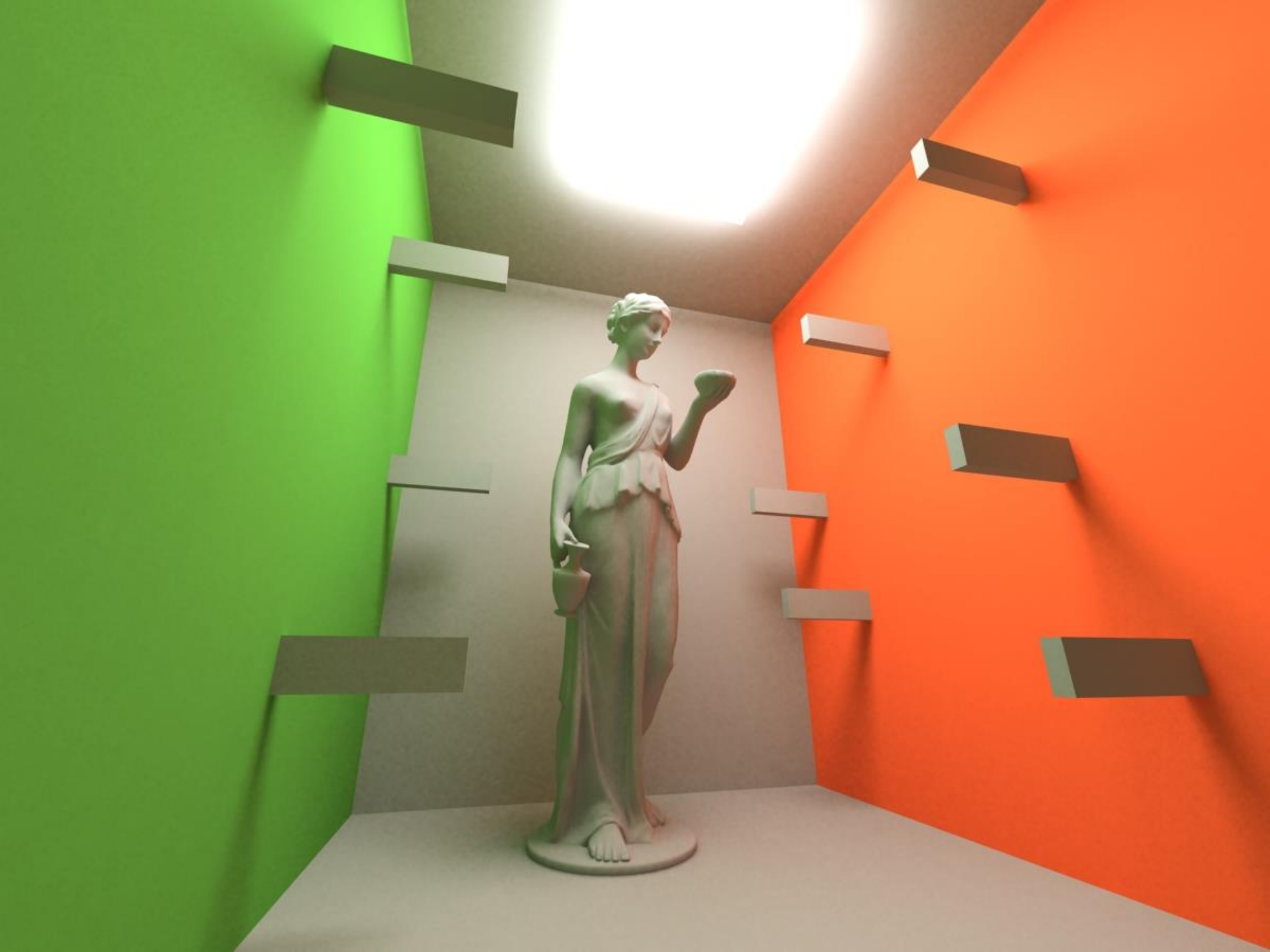
Better Space Rendering

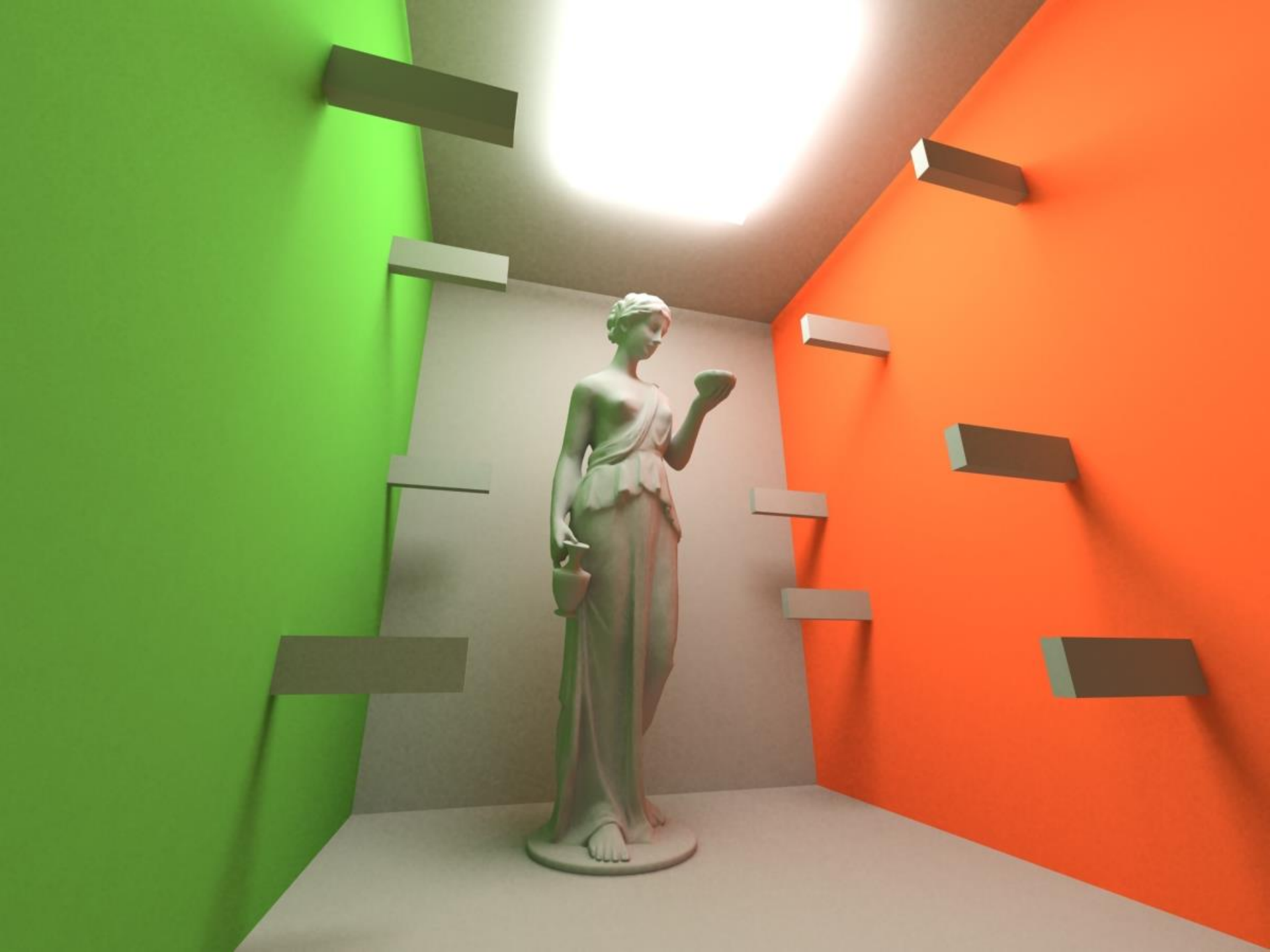
- **Jan Krizik, VSVU Bratislava, 3DS course**
- **Renderings used by permission**

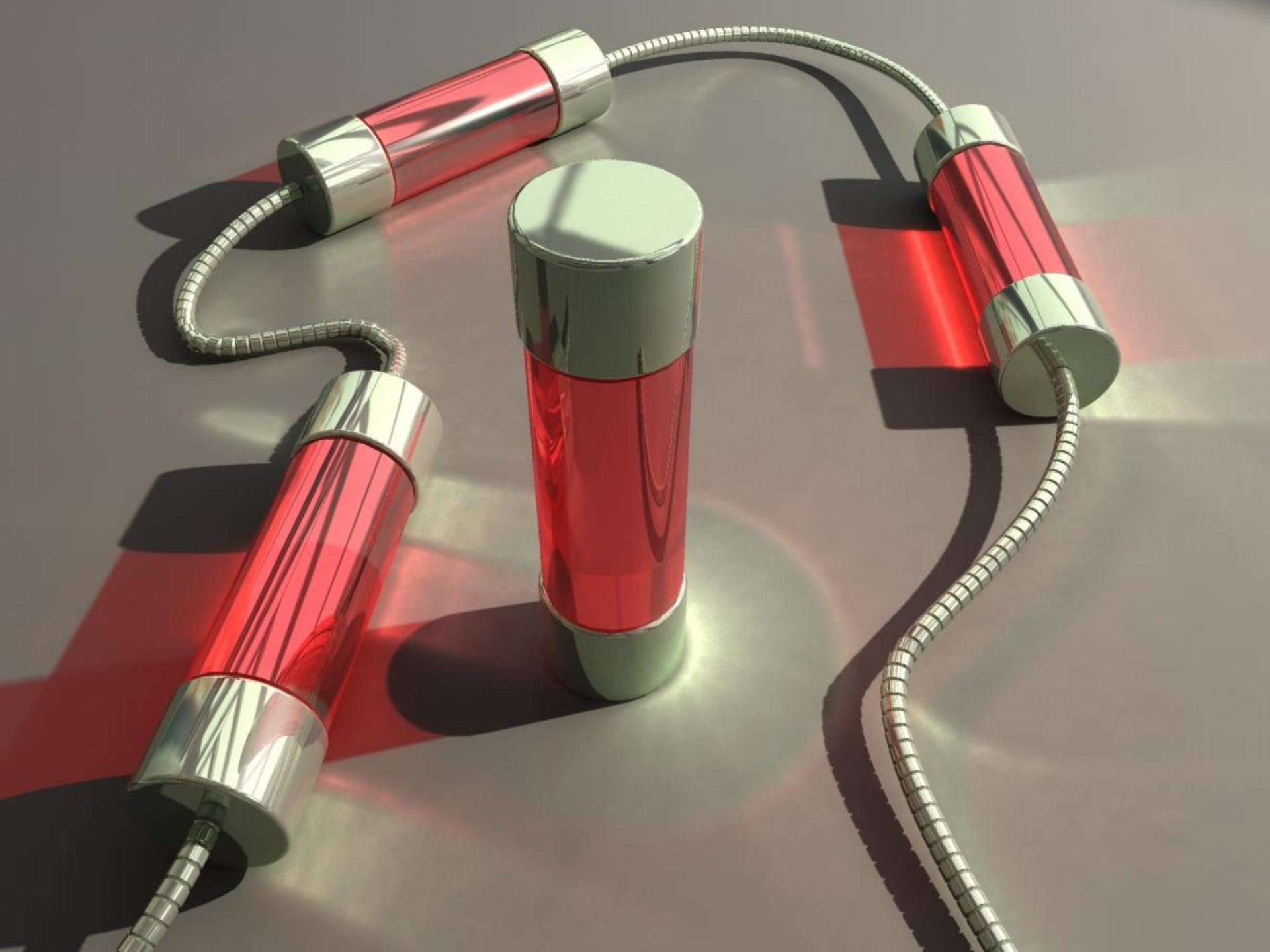










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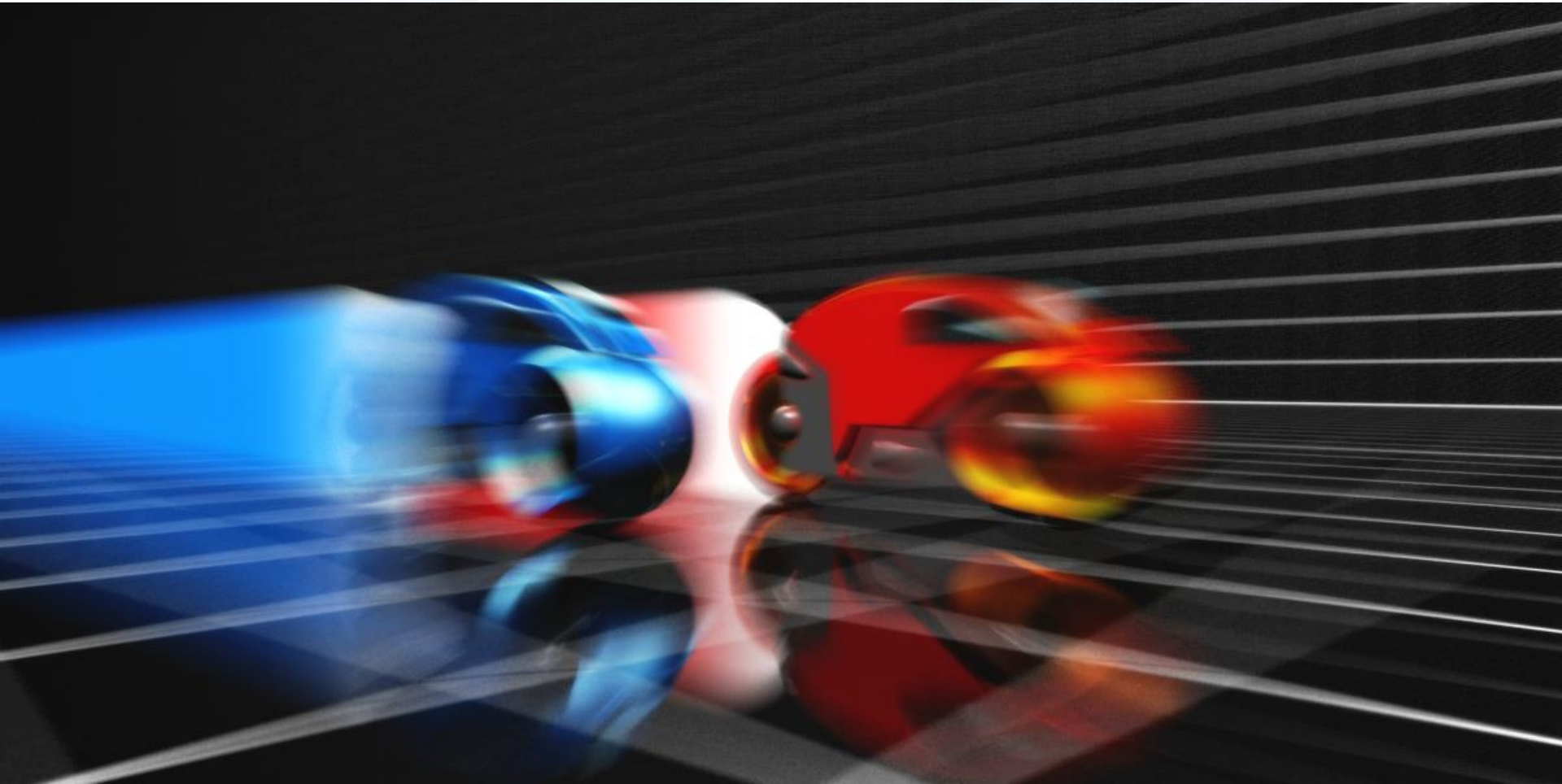
J Bratislava

Jan Krizik, VSVU Bratislava



Virtual Population

- **Colony of virtual ants – Prado Museum**

Defining Population

- Virtual habitat = v-space + v-population
- VI3DW – virtual inhabited 3D worlds
- Population – living and dead things
- Objects
- Bot .. autonomous agent .. avatar
- Autonomous agent has IQ (AI)
- Avatar represents a user (youser)

Virtual Interaction [Qvortrup01]

- What is the proper technological architecture of an autonomous agent?
- What makes an agent interesting from a user standpoint?
- How are virtual inhabited spaces staged, based on dramaturgic experience?
- What are the emerging communication patterns in the Internet-based inhabited virtual worlds?

Cyberspace

Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts… A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding.

Gibson, W. 1984. Neuromancer. London 1984. (CZ)

Philosophy…

- Virtual habitat = v-space + v-population

- Ontology – What is it?
- Epistemology – How is it experienced?

- Positivistic understanding
- Dualistic understanding

Positivism

- **Positivistic understanding**

Dualism

- **Positivistic understanding**

Phenomenology

- **Positivistic understanding?**
- **Dualistic understanding?**

- **Lars Qvortrup: phenomenology**

Virtual Beings (Faces)

- **Flatland – a story in 2D**
- **Prof. Zlatos – sci-fi generalisation**
- **Hawking disproves life existence in 2D**
- **3D – billboards, puppets, Potemkin: virtual 2D villages, probably first billboards, F/X**
- **Facial expressions, FACS // Snow Crash, CZ: Sníh by Neal Stephenson**
- **Bratislava:**
- **Stanislav Stanek >>**

Matrix: dystopy

- Thomas Morus: Utopia
- Leonid Zamjatin: We (Russian)
- George Orwell: 1984, Animal farm
- The Brave New World

- Watching people, using lie, changing or erasing memory (Big Brother)
- Matrix has nothing new

Dystopy: Matrix

- **Thomas Morus: Utopia** (Nowhere, 1516) ~ communism idea
- **Leonid Zamjatin: We** (Russian, 1921)
- **George Orwell: 1984, Animal farm** (1949, 1945)
- The Brave New World (1932), Fahrenheit 451 (1953) et al. movies: Matrix (1999), Surrogates (2009)…

- **Watching people, using lie, changing or erasing memory (Big Brother)**
- **Matrix has nothing new, except immersion**

- **Cal Newport: Digital Minim** (2019) https://www.shortform.com/summary/digital-minimalism-summary-cal-newport?gclid=Cj0KCQiAweaNBhDEARIsAJ5hwbc_BVIz7yjD9D3UAzGIgrHaoVqG_CEU5_J1kE0SqRWBtC4c3HLSk1QaAhqAEALw_wcB
- **Technology is intrinsically neither good nor bad. The key is using it to support your goals and values, rather than letting it use you.**

Matrix and/or Cube

- Matrix 1999
- Cube 1997
- Larry & Andi Wachowski, Vincenzo Natali
- Ontological confusion >> central issue
- (Drama is a discovery of new solutions)
-
- Cube: relationship between spatial distribution and power structures

Matrix

- Ontological confusion >> central issue
- (Drama is a discovery of new solutions)
- Level of aesthetics: celebration of games
- Level of melodrama: bad VR – good real
- Sujet: Is it possible to float freely between worlds with different ontologies and still return safely to the real worlds?
- Cult movie

Human Memory System [SHN97]

- **Short-term memory capacity:**
- **“The magical number seven - plus or minus two” (G. Miller, 1956) recognize seven “chunks” of information hold for 15 to 30 seconds forget or move to long-term memory**

- http://www.uni-paderborn.de/fachbereich/AG/agdomik/visualisierung/vis-report/tutorial/chapter3/tsld012.htm

Human Memory System 2

- **Short-term memory in conjunction with working memory**

- **short term memory:** process perceptual input
- **working memory:** generate and implement solutions

- disruptions, anxiety cause loss of information

- http://www.uni-paderborn.de/fachbereich/AG/agdomik/visualisierung/vis-report/tutorial/chapter3/tsld012.htm

Metaphors of memory

- Drouwe Draismaa in Czech translation
- Wax table, theater, photo, computer...
- Behaviorists
- Connectionists

- Hologram, neural networks

Human Visual System

- **Self-defense and Survival:**
  - **(sound, fast brain/amygdala)**
  - **1. motion !!!**
  - **2. shape (the longest vertical one first)**
  - **3. color, texture, „structure“**
  - **4. symbols recognition**
  - **5. meaning .. ambiguity .. more**

“Invisible Color” (by AF)

- **Self-defense and Survival:**
  - **(sound, fast brain/amygdala)**
  - **1. motion !!!**
  - **2. shape (the longest vertical one first)**
  - **3. color, texture, „structure“**
  - **4. symbols recognition**
  - **5. meaning .. ambiguity .. more**

“Urban Text”

- Policy of memory
- Your dilemma: pain or beauty
- City dilemma: identity vs. image
- Musealization of historic centers

- Huyssen, A. 2005. Urban Palimsests… in Slovak translation

Matrix: honneur de parodie

- Parody conditions
- Don Quijote example
- Matrix (outtakes, cow, table tennis…)

Ontology Example

- CIDOC CRM
- Conceptual Reference Model for Virtual Museums – entities, properties
- The Nose of Michael Jackson before and after => ontology is a data model

- Alphaworld – profiting cybercity ~ CA

Ryan Clark (2015)

Web Graphic

- Sucker Punch Productions Junior Technical Designer
- Remedy Entertainment Associate Art Director (Vanguard)
- Remedy Entertainment UI Designer (Vanguard)
- Remedy Entertainment Senior Gameplay Designer (Vanguard)
- Remedy Entertainment Senior AI Designer (Vanguard)

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- 2020 Game Connection's Winner Labyrinth City...
- Announcing the release date of "Arcade Archives...

these folks (and many others like them!) are the ones you should be studying and listening to.

(A quick aside: Just because someone has been repeatedly successful doesn't necessarily mean that they KNOW why they've been successful. It could be something subconscious that affects the way that they make games. Study their games and look for patterns, for sure, but always take any written article, including this one, with a grain of salt! No matter who the author is.)

So who the hell am I? I do not claim to be a big shot, but I've made a living in this industry since going independent full time in 2004. I've created 10 games in that span, and 8 have been profitable or break-even. 3 have grossed more than $1M, including Crypt of the NecroDancer, which has earned even more. It's possible that I have just been lucky, I admit, but I hope not!

I have an explicit method that I use when selecting which game designs to move forward with, and I will describe that method in this article.

Good Isn't Good Enough

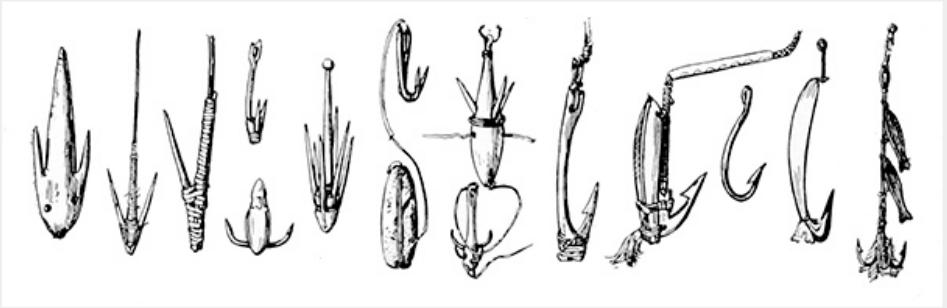
A "good game" is usually not enough, and I think the method used by many newcomers will generally produce "good games". It's common to take a look at a successful "game X", see various flaws in it, and decide to make "game X but BETTER!" or "game X but IN SPACE!" I must admit, my first indie game was basically "game X but better"! Don't fall into that trap.

To improve the likelihood of success your game needs to stand out. But how? Here are the steps I take for any given game design:

- Evaluate the quantity and quality of the game's "hooks"
- Evaluate the viability of the market for similar games
- Consider how you can describe and promote the game

We will discuss each of these factors below.

Hooks

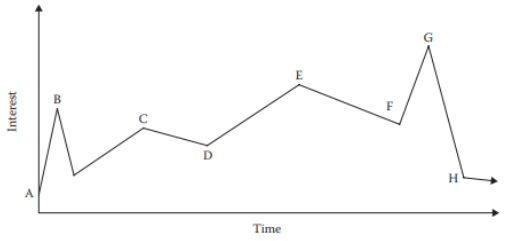


If you want people to remember your game, to talk about your game, to write articles about your game, etc, it needs to have a hook. Preferably multiple hooks! In music, a hook is a short riff or melody or phrase that really grabs the listener and gets stuck in their head. For example, the riff at the start of Queen's "Under Pressure" was such a great hook that it was later re-used as the hook for "Ice Ice Baby".

	Human user	Designer-in-avatar	User-in-avatar	Bot	Object	Virtual world
Human user	HU/HU					
Designer-in-avatar	D-in-A/HU	D-in-A/D-in-A				
User-in-avatar	U-in-A/HU	U-in-A/D-in-A	U-in-A/U-in-A			
Bot	Bot/HU	Bot/D-in-A	Bot/U-in-A	Bot/Bot		
Object	Ob/HU	Ob/D-in-A	Ob/U-in-A	Ob/Bot	Ob/Ob	
Virtual world	VW/HU	VW/D-in-A	VW/U-in-A	VW/Bot	VW/Ob	VW/VW

Figure 2.2 Matrix of 21 types of interaction in VI3DWs.

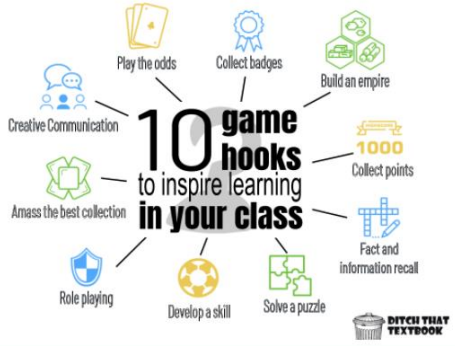
ou can use to add small game elements --
our class!



on the type of experience, these expectations are influenced by the packaging, advertisements, advice from friends, etc. While we want this initial interest to be as high as possible to get guests in the door, overinflating it can actually make the overall experience less interesting.

Then the experience starts. Quickly we come to point (B), sometimes called "the hook." This is something that really grabs you and gets you excited about the experience. In a musical, it is the opening number. In the Beatles song Revolution, it is the screaming guitar riff. In Hamlet, it is the appearance of the ghost. In a videogame, it often takes the form of a little movie before the game starts. Having a good hook is very important. It gives the guest a hint of what is to come and provides a nice interest spike, which will help sustain focus over the less interesting part where the experience is beginning to unfold and not much has happened yet.

Once the hook is over, we settle down to business. If the experience is well crafted, the guest's interest will continually rise, temporarily peaking at points like (C) and (E) and occasionally dropping down a bit to points like (D) and (F), only in anticipation of rising again.



Quick Navigation

Clark Tank DEEP DIVE | How to Make Video Game Hooks: Part 1

https://www.youtube.com/watch?v=NOb-PdYwkwk

Clark Tank DEEP DIVE | How to Make Video Game Hooks: Part 2

https://www.youtube.com/watch?v=F-8N0DuHwJo

BUT,

New media cause procrastination

=>

Digital minimalism

Implications 4 Web Design

- … homework

Implications 4 Web Design

- … homework for the rest of your life

Your Success

- Authoring
- Portfolio
- Work/time organisation
- Da Vinci on savoir vivre, art of living
- …

Thank You

For Your Attention

Virtual Population

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